Health Canada Santé Canada

A Conceptual and Epidemiological Framework for

Child Maltreatment Surveillance

Canada

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maintain and improve their health.
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Prepared by David A. Wolfe, PhD and Lilian Yuan, MD, MSc
under contract to:

Child Maltreatment Section
Health Surveillance and Epidemiology Division
Health Canada
HPB Bldg #7, Tunney's Pasture
A.L. 0701D
Ottawa, Ontario
K1A 0L2
Tel: (613) 957-4689
Fax: (613) 941-9927

Editors: Lil Tonmyr and Gordon Phaneuf
Publication Consultant: Janet Doherty

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REVIEWERS AND STAKEHOLDERS

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Anne Broadbent
Australian Institute of Health and Welfare
Canberra, Australia

Dr. Donald Bross
Kempe Children's Center
Denver, Colorado

Dr. Alberto Concha-Eastman
Pan American Health Organization
Washington, DC

Dr. David Finkelhor
University of New Hampshire
Durham, New Hampshire

Dr. John Fluke
Walter R. MacDonald Associates
Englewood, California

Dr. Jeff Haugaard
Cornell University
Ithaca, New York

Dr. Clyde Herzman
University of British Columbia
Vancouver, British Columbia

Dr. Ken Johnson
Health Canada
Ottawa, Ontario

Dr. Fraser Mustard
Founders Network
Toronto, Ontario

Dr. Claude Romer
World Health Organization
Geneva, Switzerland

Dr. Andrea Sedlak
WESTSTAT
Rockville, Maryland

Dr. Gene Shelley
Centers for Disease Control and Prevention
Atlanta, Georgia

FORUM ON CHILD MALTREATMENT SURVEILLANCE: ISSUES AND OPTIONS – DECEMBER 14, 1999

Participants List

Sharon Bartholomew
Health Canada
Ottawa, Ontario

Dr. Bernard Choi
Health Canada
Ottawa, Ontario

Valerie Gaston
Health Canada
Ottawa, Ontario

Dr. Paul Gully
Health Canada
Ottawa, Ontario

Dr. Dirk Huyer
The Hospital for Sick Children
Toronto, Ontario

Dr. John Last
University of Ottawa
Ottawa, Ontario

Dr. Catherine McCourt
Health Canada
Ottawa, Ontario

Gordon Phaneuf
Health Canada
Ottawa, Ontario

Dr. Rosonna Tite
Memorial University of Newfoundland
St. Johns, Newfoundland

Lil Tonmyr
Health Canada
Ottawa, Ontario

Dr. Don Wigle
Health Canada
Ottawa, Ontario

Dr. David Wolfe
University of Western Ontario
London, Ontario

1

Conceptual Framework for

Child Maltreatment Surveillance

David A. Wolfe, PhD

INTRODUCTION AND PURPOSE

Documentation and surveillance of child maltreatment is one of the first steps to developing effective prevention and services[1]. Consequently, there is a growing call worldwide to document the incidence and prevalence of child maltreatment, including forms that are culturally-specific, or result from the fallout of unusual circumstances such as war, famine, and disasters that are relatively unknown in Western society.

When child maltreatment was brought to the world's attention in the early 1960s, pediatrician Henry Kempe estimated that fewer than 1,000 children in the U.S. were victims of child maltreatment (primarily physical abuse) each year. However, when the first nationwide effort to study the incidence of child abuse and neglect was launched in the United States 20 years later, permitting state and federal governments to monitor the problem in greater detail, it became apparent that the incidence of child maltreatment was well beyond the ability of the system designed to deal with it[2]. The number of identified abused and neglected children in the United States, for example, doubled from 1.4 million in 1986 to 2.8 million in 1993[3], reaffirming that child maltreatment was a serious and pervasive cause of child injuries and deaths.

Child abuse and neglect are not recent phenomena, nor are they associated with any historical period or cultural practice. The relatively recent upsurge in interest regarding the prevention and treatment of child maltreatment may be due, however, to the fact that society's understanding of this topic evolved considerably in the course of three decades. Maltreatment of children rarely raised concern prior to the mid-20th century because Western societies viewed harsh forms of discipline and corporal punishment as a parent's right and responsibility[4]. Consequently, physical coercion, corporal punishment, and thoughtless neglect dominated the choices of disciplinary methods for generations. Fortunately, counter-efforts to value the rights and needs of children made a strong appearance in the late 20th century in many developed countries[5], spurring further interest in public health strategies to document and reduce the incidence of child maltreatment.

Concerted efforts to understand the causes and consequences of child maltreatment has led to immense gains in knowledge and resources, while at the same time pointing out the complex nature and unknown elements of the problem. It is widely accepted today, for example, that the context of child maltreatment includes societal, cultural, and socioeconomic factors, as well as those closest to the child's social world— the parent-child relationship and the family. To understand the developmental importance of child maltreatment, one only has to recognize how the parents' failure to provide nurturing, sensitive, available, and supportive caregiving makes any form of maltreatment particularly harmful to child development.

The field of child abuse and neglect has matured considerably, resulting in a growing knowledge base for establishing a comprehensive approach to the identification, reporting, intervention, and prevention of these phenomena. Such efforts have been undertaken at a national level in a number of countries including the United States and Australia, and recent Canadian figures have provided the first look at incidence in this country, a critical step in establishing a national policy[6].

The Importance of Surveillance

Surveillance involves the systematic collection, analysis, and dissemination of data relating to health and safety. Surveillance data may be obtained from both existing and new population-based studies, such

as census data and public surveys, as well as reports from research institutions that answer specific questions relating to health status. Surveillance data informs officials at all levels of government of possible risks and trends affecting health and safety, and assists in program development and prevention initiatives. Surveillance systems also are intended to provide routine data related to particular health and safety outcomes, risk factors and intervention strategies which support research, public health planning, and program development.

The Canadian Incidence Study of Reported Child Abuse and Neglect (CIS) collected systematic data pertaining to some of the key variables identified in the conceptual framework, and involved participating provincial and territorial child welfare agencies across Canada[6]. The study collected information pertaining to reports of four principal categories of maltreatment: physical, sexual, emotional and neglect, using a standard data collection tool completed by child welfare workers.

The CIS has several important objectives:

- to examine the rates of physical abuse, sexual abuse, neglect, and emotional maltreatment, as well as multiple forms of maltreatment, reported to, and investigated by, child welfare services;
- to examine the severity of maltreatment in terms of chronicity and evidence of harm/risk;
- to examine selected determinants of health for investigated children and their families; and
- to monitor short-term investigation outcomes, including substantiation rates, placement in care, use of child welfare court, and criminal prosecution.

Information from the CIS will be used to increase public awareness, inform professional practice, strengthen understanding and knowledge, identify areas of research, and set priorities for prevention and intervention.

The surveillance framework for child maltreatment is intended to serve as a blueprint for building an effective system to identify and prevent child maltreatment. Surveillance efforts will provide key information on the major and minor factors affecting the incidence, circumstances, and consequences of child maltreatment. Similarly, decisions on funding, prevention, training, and social policy priorities all depend on a foundation of information.

Purpose of the Conceptual Framework

The purpose of this document is to guide surveillance of key factors associated with the incidence and prevalence of child maltreatment. The proposed framework identifies key surveillance factors at each level of population health: individual (including adults and children), family, community, and societal. These factors are described and organized within a conceptual framework based on a population health perspective, which covers the major determinants of health as they relate to the field of child maltreatment. An analysis of the framework is presented in relation to the importance of surveillance in child maltreatment, resulting in recommended priorities and partnerships for collecting data at various levels.

The conceptual framework for child maltreatment surveillance was developed to provide structure to and understanding of key components in the field of child maltreatment that are relevant to ongoing surveillance. The framework provides the theoretical context for practical initiatives, and is a guide to possible future surveillance activities. It builds on a public health approach to the epidemiology and prevention of major illnesses and health-related factors, and is intended to offer a strategy for development of policies and programs and a rationale for decision making. Major theories and findings on child maltreatment were reviewed in preparing the framework, and key components rele-

vant to monitoring the health of children and protecting them from maltreatment are summarized.

Unique theoretical issues pertaining to the different forms of child maltreatment are considered prior to describing the conceptual framework. Although physical abuse, sexual abuse, emotional maltreatment, and neglect share common etiologies and tend to overlap among identified families, there are also important differences in terms of identified risk factors. For example, social disadvantage, poverty, and isolation are major risk factors for child neglect, in particular. Child sexual abuse has its own set of unique risk factors that merit careful description and monitoring, such as the availability of child pornography and the methods used by offenders to avoid detection, which are identified and included in the conceptual framework.

DEFINITIONS OF CHILD MALTREATMENT

This section defines the major forms of maltreatment and highlights issues and concerns. Defining child maltreatment is not a straightforward task, due to geographical, cultural, legal, and theoretical considerations. Current definitions of maltreatment are reviewed from legal, social science and child welfare perspectives. Definitions of child maltreatment are central to the conceptual framework, and continued efforts to monitor reported and documented incidents will serve to inform future definitions.

Different definitions of child maltreatment may be adopted by an organization, government, community, or researcher to serve a particular purpose. Provinces and territories, for example have often adopted legislation-based definitions that focus largely on evidentiary criteria in an effort to prove or disprove an act of abuse. Caseworkers, on the other hand, who are mandated to investigate accusations of maltreatment may weigh other discretionary, clinically-based criteria more heavily for determining their course of action, such as the parent's remorse, family resources, and the child's need for protection. Social and psychological definitions of child abuse, in contrast, focus more heavily on the implications of abuse for the child's development, a purpose that is particularly relevant to social science research and intervention. These approaches are considered below in terms of their relative value and shortcomings in arriving at practical definitions.

Legal, Social Science and Child Welfare Perspectives

During the 1970s, a series of international and national conferences on child abuse, partner abuse and abuse of the elderly resulted in new laws and initiatives at all levels of jurisdictions, designed to cope with these concerns in both the United States and Canada. Some of these efforts represented extensions and revisions of existing civil and criminal statutes, while others were attempts at new forms of intervention and services. As a result, statutes relating to child maltreatment are now in place throughout North America.

Legal statutes attempt to define the minimal acceptable criteria for childcare, with provisions for social or legal intervention specified under certain circumstances, such as non-accidental injuries or inadequate medical attention. Legal definitions consider children to be in need of protection if their life, health, or safety may be endangered by the conduct of their caregiver. Legal definitions emphasize parental deviance and wrongdoing, thereby directing the focus predominantly on the implicit intent to inflict harm, or the incapability of the parent to protect the child from harm.

Because many reports of child maltreatment involve non-life-threatening injuries (rather than major

acts of assault) that typically occur in the context of discipline, social science definitions have evolved to allow greater recognition of the individual, family, and social context of maltreatment. This perspective places primary importance on the relationship context in which such events occur and have their greatest psychological impact, such as developmental and psychological consequences, antecedents, and child-rearing norms. Maltreatment is often enmeshed in other serious family problems, most notably parental substance abuse, financial problems, and stressful life circumstances, all of which are related to some degree to negative developmental outcomes. Thus, a social science perspective builds on legal definitions by including antecedents and consequences of maltreatment within its developmental and ecological context[7].

Child maltreatment is often classified into four major categories: physical abuse, neglect, sexual abuse, and emotional maltreatment.

Physical abuse is the deliberate application of force to any part of a child's body, which results or may result in a non-accidental injury. It may involve hitting a child a single time, or it may involve a pattern of incidents. Physical abuse also includes behaviour such as shaking, choking, biting, kicking, burning or poisoning a child, holding a child under water, or any other harmful or dangerous use of force or restraint. Child physical abuse is usually connected to physical punishment or is confused with child discipline.

Neglect occurs when a child's parents or other caregivers are not providing essential requisites to a child's emotional, psychological and physical development. Physical neglect occurs when a child's needs for food, clothing, shelter, cleanliness, medical care and protection from harm are not adequately met. Emotional neglect occurs when a child's need to feel loved, wanted, safe and worthy is not met. Emotional neglect can range from the context of the abuser simply being unavailable to that in which the abuser openly rejects the child. While a case of physical assault is more likely to come to the attention of public authorities, neglect can represent an equally serious risk to a child.

Sexual abuse is generally defined as any sexual experience between a child and an adolescent or adult. Sexual abuse includes attempted and actual fondling of a child's genitals, intercourse, incest, rape, sodomy, exhibitionism, and commercial sexual exploitation through prostitution or the production of pornographic materials. Some definitions of sexual abuse require evidence of coercion, force, or abuse of authority. Like all forms of maltreatment, sexual abuse is also emotionally abusive to the child's sense of self, trust, and personal safety.

Emotional maltreatment involves an attack on a child's sense of self, and involves acts or omissions by the parents or caregivers that have caused, or could cause, serious behavioural, cognitive, emotional, or mental disorders. Emotional maltreatment can include verbal threats and put-downs as well as habitual scapegoating, belittling, and name-calling. Other examples include forcing a child into social isolation, intimidating, exploiting, terrorizing or routinely making unreasonable demands on a child. It is often part of a pattern of family stress and inappropriate care, and frequently co-exists with other types of abuse. Some provinces in Canada now include exposure of a child to violence between the parents as a form of emotional maltreatment, due to the serious harm that such exposure may pose to the child's emotional well-being[8].

EPIDEMIOLOGY

Incidence and Prevalence Studies

There are two ways to consider how common child maltreatment is. The first is based on *incidence* rates, which tell us how many children are officially reported each year, and the second is *prevalence* estimates, which indicate the number of people in the population who are maltreated prior to 18 years of age (both are divided by the total population from which the cases are identified, such as the number of children or adults in the population). Although official incidence rates provide a useful year-to-year comparison of reported rates of child maltreatment, they have been criticized as being a significant underestimate of the actual occurrences of maltreatment nationwide (see Reporting Issues, below). Incidence of maltreatment can also be estimated from large-scale community or nation-wide surveys that are representative of society at large, which avoid some of the factors that may inhibit children or adults from reporting maltreatment to officials. Finally, lifetime prevalence estimates of maltreatment are derived by asking adults if they ever experienced particular forms of maltreatment as a child. These latter studies have been conducted almost exclusively on lifetime prevalence of sexual abuse, however.

Child maltreatment is found in all societies and is almost always a highly guarded secret wherever it occurs[1]. Although it is difficult to draw comparisons between countries because of differences in defining and reporting child maltreatment, what little is known about the incidence and prevalence of maltreatment worldwide suggests that these phenomena are at epidemic proportions in both developed and less developed countries. International studies of sexual abuse, in particular, indicate that the prevalence is comparable to North American rates, clustering around 20% for females and between 3% and 11% for males reporting sexual abuse prior to the age of 18 years[9] (estimates of sexual abuse for African, Middle Eastern, or Far Eastern countries are not available). The United Nations Children's Fund, in a recent publication entitled *The State of the World's Children 2002*, also estimates that one million children worldwide are being forced into prostitution and pornography. Similar global estimates of physical maltreatment, unfortunately, are not available.

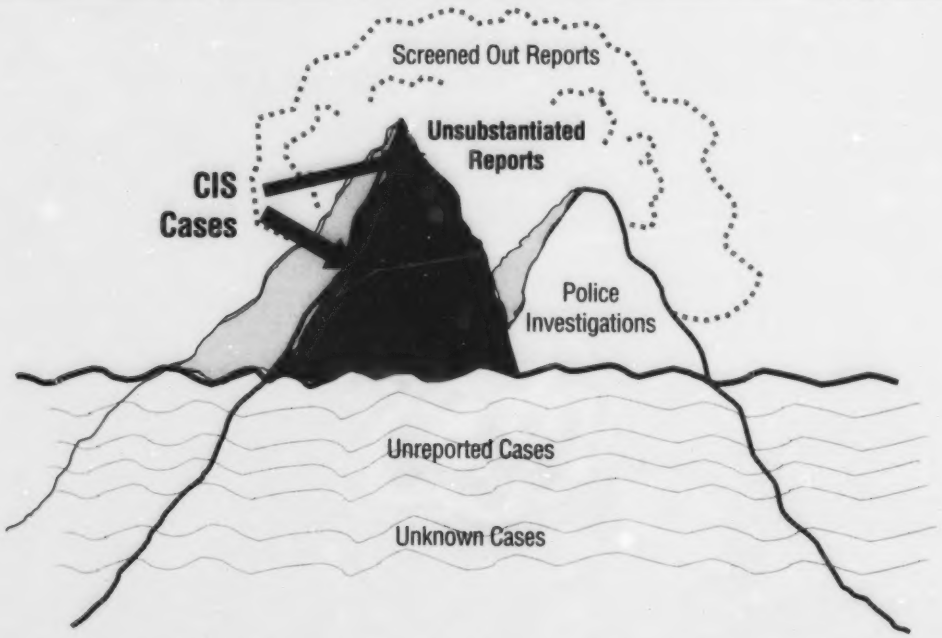
United States

Based on reports from state child protective service agencies to the National Child Abuse and Neglect Data System in 1996, almost 3 million children are reported as being harmed or endangered each year in the U.S.[10]. In relation to the number of children in the U.S. population, this figure means that reports were filed on about 43 per 1,000 children. After investigating these reports, about one million children were confirmed as victims of child maltreatment that year (15/1,000).

Neglect continues to be the most commonly reported form of maltreatment, affecting almost 30 children out of every 1,000 in the United States, and accounting for 70% of all reported incidents. Physical, sexual, and emotional maltreatment affect another 18 children per 1,000, or 43% of the total (these percentages exceed 100% due to overlap). Specifically, physical abuse accounts for 22%, sexual abuse for 11%, and emotional maltreatment for 18% of maltreatment incidents (again, with overlap in reports). Sexual abuse reports and substantiated cases rose dramatically in the 1980s, but have since levelled off[3].

Anonymous surveys ask representative samples of parents to indicate how often they have used various child rearing methods over the past year, such as hitting a child with an object, which results in higher estimates of the number of children at-risk of maltreatment each year than official reports. For example, based on telephone interviews with over 3,500 families in the United States, 10.7% of parents admit-

Figure 1
Scope of Canadian Incidence Study of Reported Child Abuse and Neglect



* Adapted from Trocmé N, McPhee D et al. *Ontario incidence study of reported child abuse and neglect*. Toronto, ON: Institute for the Prevention of Child Abuse, 1994; Sedlak AJ, Broadhurst DD. *Executive summary of the third national incidence study of child abuse and neglect*. Washington, DC: U.S. Department of Health and Human Services, 1996.

Source: Trocmé N, MacLaurin B, Fallon B, Daciuk J, Billingsley D, Tourigny M, et al. *Canadian incidence study of reported child abuse and neglect: final report*. Ottawa, Ontario: Minister of Public Works and Government Services Canada, 2001.

ted having used some method in the past year to control their child that amounted to a "severe violent act," such as hitting with an object, pushing, or scalding their child[11]. This population-based estimate places the incidence of physical abuse about five times higher than the NIS-based rate of physical, sexual, and emotional abuse combined.

Canada and Australia

The Ontario Health Supplement provides lifetime prevalence estimates of maltreatment, derived from asking adults if they ever experienced particular forms of maltreatment as a child. This study involved a general population survey of nearly 10,000 residents of Ontario in which persons 15 years and older were asked about health-related factors, including physical and sexual abuse in childhood[12]. A history of child physical abuse was reported more often by males (31.2%) than females (21.1%), while sexual abuse during childhood was more commonly reported by females (12.8%) than males (4.3%).

A comparison of incidence rates of reported child maltreatment in the United States, Australia, and Ontario indicates how the broader social context may influence incidence estimates. Canadian estimates, based on the Province of Ontario[13], suggest that the United States has about double Canada's overall rate of reported maltreatment (43/1,000 vs. 21/1,000). Similar differences (16/1,000) are reported for Australia[14]. Higher United States rates of neglect are primarily responsible for differences between otherwise similar countries, which in turn may reflect the higher poverty rate in the United States and the more limited access to social, medical, and educational services for many United States families[14,15]. United States estimates

include reports from sentinels as well as child protective service agencies, however, which could also account for the greater number of reports in that country relative to Canada and Australia.

Reporting Issues

Because incidence rates are primarily based on *reported* child maltreatment, researchers have attempted to estimate the extent of under-reporting by mandated reporters. Basing their conclusions on several studies related to identification and reporting of child maltreatment, Loo et al., estimate the *reporting probability* of various professional groups and settings as averaging 56%, which corresponds to an under-reporting rate of 44%[8].

Reasons for under-reporting of suspicions of child maltreatment are numerous, although a common denominator is differences in training (medical training versus training in social work or psychology, for example). Although the majority of medical professionals report their suspicions without hesitation, some may be less likely to do so given previous experiences with the system or their belief that they can find better options for the child[9]. Professionals' personal views on physical punishment is one documented reason for under-reporting, since one's belief in the use of physical discipline may influence his or her decision to report suspicions of child maltreatment. In addition, the relative severity of injury influences a physician's reporting decision, with the more visible and severe injuries being more likely to be reported.

A consistent finding in child maltreatment reporting relates to professionals' views of the effectiveness of child protective services (CPS). Some professionals are reluctant to refer child maltreatment cases that do not have significant physical injuries, because they have previously discovered that such cases are sometimes screened out by CPS. As a result, some mandated reporters have become frustrated at the perceived lack of sensitivity by CPS organizations to serious or potentially serious abuse, and have avoided the system on some of the more questionable situations. This dilemma not only results in a lower incidence rate of reported child maltreatment, but poses a significant obstacle to prevention and intervention services.

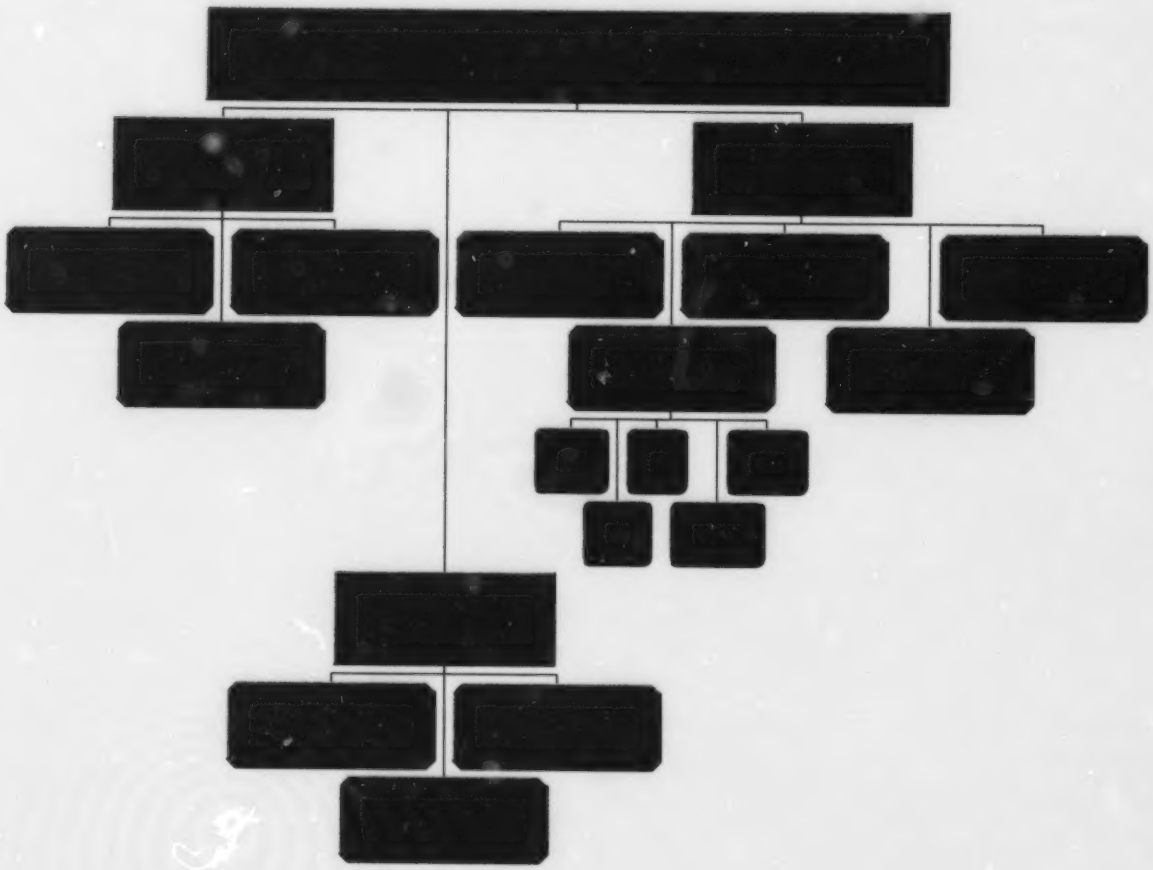
Demographic and Situational Findings

Epidemiological data on the circumstances and nature of child maltreatment are critical for ongoing surveillance and future policy and prevention planning. General conclusions regarding the age and gender distributions of child victims and adult offenders are available, and have remained relatively stable across the three National Incidence Studies (NIS) in the U.S. Data on circumstances and outcomes of child maltreatment are less systematically collected, but have considerable importance for surveillance. These data include antecedents of maltreatment, such as the role of children's behaviour, disorders, or adult inadequacy, the severity, nature, and duration of reported maltreatment, and circumstances surrounding the events, such as methods to avoid disclosure, the use of force, and similar factors discussed below.

Children

Age, Gender, Ethnicity. The NIS studies have consistently found that children's gender and age are related to risk of maltreatment, but ethnicity is not[3]. Toddlers, preschoolers, and younger adolescents are the most common victims of physical and emotional abuse, which corresponds to the emergence of greater independence and parent-child conflict at these developmental periods. Neglect is most often reported when children are quite young (infancy and toddler-hood), with incidence declining with age. Sexual abuse, in contrast, is relatively constant from age 3 on, which attests to children's vulnerability from early preschool years throughout childhood[3]. Although child physical abuse affects a sizeable proportion of all age groups, the highest rate of physical *injury* is found among older children (12-17 years of age), probably because of increasing parent-teen conflict.

Figure 2
Demographic and Situational Factors



There are few significant gender differences in maltreatment rates, with the important exception of sexual abuse. Although girls are more likely to be victims of any form of abuse than boys, this essentially reflects the fact that they account for about 70% of the victims of sexual abuse[16]. Moreover, the dynamics of sexual abuse differ considerably for boys and girls. Although boys as well as girls are more likely to be sexually abused by someone they know and trust, boys are more likely to be abused by male non-family members whereas girls are more likely to be sexually abused by male family members[17]. This finding suggests different patterns of vulnerability for boys and girls, which have implications for surveillance.

Adult and Juvenile Offenders

Gender and Relationship to Child

Adult offenders are the child's birth parents about 80% of the time, although there are important exceptions and key gender differences in relation to different forms of maltreatment. Nearly one-half of sexually abused children are abused by persons other than parents or parent figures, compared to only a fraction in other categories. Neglect is committed predominantly — about 90% of the time — by mothers, which fits with the fact that mothers and mother-substitutes tend to be primary caretakers and the heads of single-parent homes. In contrast, sexual abuse is committed more often — about 90% of the time — by males, about half

of whom are the child's father or father-figure. Males are also the offenders in the majority of emotional (63%) and physical abuse (58%) incidents as well[3].

Although mainly, the perpetrators of child sexual assaults are primarily male[18], mother involvement may span the continuum from active participation and encouragement (considered to be very rare), to denying the abuse and siding with the offender (a minority of instances), to supporting the child's disclosure and terminating the partners' relationship, although sometimes in an ambivalent or defensive manner[19].

Prior Records

Police and child welfare records of the behaviour of adult offenders also form part of the surveillance of demographic and situational factors. Standard methods should be implemented in all provinces to ensure accurate recording of relevant information on prior offenses and their dispositions. Similar to criminal records, information should include details on the nature of the offense, characteristics of the offender and victim, and related details of prior allegations and investigations.

Circumstances and Outcomes

Child Behaviour

Incidents of physical abuse occur most often during difficult, but common, episodes of child behaviour. A study of 825 official case records of physical abuse incidents revealed that abuse was most often associated with oppositional child behaviour such as refusal, fighting and arguing, accidental occurrences, immoral behaviour, dangerous behaviour, the child's sexual behaviour, and inconveniences due to the child[20]. Not surprisingly, aversive child behaviour, such as crying, may produce anger and tension in some adults that contributes to aggressive response.

Adult Inadequacy

The above study also revealed that circumstances preceding incidences of neglect were characterized by chronic adult inadequacy as opposed to child behaviour, such as refusing to meet family needs, inadequate adult supervision, parents' lack of knowledge, inappropriate use of medical facilities, unsafe home environment, and child's dangerous behaviour.

Methods to Reduce Child Resistance

Sexual abusers, in particular, develop complicated techniques for gaining access to and compliance from children such as friendship, playing games or giving presents, having hobbies or interests that appeal to the child, and using peer pressure. Sexual offenders seldom resort to violence or force to gain the child's compliance; rather, they are attentive to the child's needs in order to gain the child's affection, interest, and loyalty and to reduce the chances that the child will report the sexual activity. Such an offence amounts to a breach of trust. Sexual behaviour takes place after a period of "grooming" involving a gradual indoctrination into sexual activity[21]. Perpetrators' efforts at establishing a relationship with the child or youth, such as spending time alone, singling the child out as favoured or special, may also reduce internal inhibition by distorting their role and blurring interpersonal boundaries.

Abuse-related Factors

Child maltreatment also has considerable psychological importance because it occurs within ongoing relationships that are expected to be protective, supportive, and nurturing. Because children are dependent on the people who may also maltreat them, they face a paradoxical dilemma: They want the abuse to stop but they also long to belong to a family. The nature of child maltreatment, therefore, requires a surveillance capacity that is sensitive to the positive as well as the negative dynamics of the adult-child relationship, including the family context. Specific factors that have been shown to be empirically related to increased child distress include the severity, nature, and duration of maltreatment, multiple types of maltreatment experiences, multiple offenders, the use of force, and a closer relationship to the perpetrator[22,23].

Legal Consequences

Prosecution, sentencing, treatment referrals, and similar findings following disclosure or reported maltreatment are aspects of the surveillance capacity concerning the circumstances and outcomes of maltreatment.

THEORETICAL CONTRIBUTIONS

To understand the multiple causes and effects of child maltreatment, children's experiences must be examined within a developmental and family context. This context includes how children perceive the emotional climate of their family, how they interpret acts of abuse and violence directed by loved ones toward them, and what coping abilities and resources they have available to compensate for stressful, inadequate care giving. Maltreated children have typically grown up in a family context that fails to provide appropriate developmental opportunities and stimulation, and one that is inconsistent and disorganized. While recognizing that the experiences of each child victim differ in important ways from those of other victims, there are some patterns that describe important, common features of their child rearing environments. Moreover, theories often presume that abuse interferes with ongoing development in pervasive and damaging ways. Therefore, evidence of developmental impairments and outcomes across studies of related, but different, forms of maltreatment should converge on similar dimensions.

Theoretical perspectives and key findings are presented below in relation to two overlapping issues that are relevant to a comprehensive conceptual framework underlying surveillance of child maltreatment. **Causes of Maltreatment** include theories and findings relating to individual, family, community, and societal factors affecting the incidence, prevalence, and course of maltreatment. **Consequences of Maltreatment** include the immediate and long-term developmental effects of various forms of maltreatment, based on theories and findings across the lifespan. Consequences also include the impact of abuse on the family, community, and society, where known or implied. These theoretical perspectives form the foundation for the development of the conceptual framework for child maltreatment surveillance.

Causes of Maltreatment

Unravelling the causes of child abuse requires an understanding of such behaviour within its unique context, including background factors, existing child-rearing norms that tolerate certain levels of violence between family members, and individual risk factors. There is no single integrative theory that fully captures the diversity of perspectives and findings represented by current research in child maltreatment. Initial theoretical perspectives that have guided the study of the causes and effects of maltreatment are insufficient to account for the dynamic and interacting contextual, developmental, and system influence that have been identified as important.

Notwithstanding the critical role of the offender, child maltreatment is rarely caused by a single risk factor. Various risk signs are usually present, but risk signs may be common to many families under stress who do not harm their children. These causal conditions stem largely from the interaction of individual, familial, and cultural influences.

Theories concerning individual, family, community, and social-cultural influences of child maltreatment are discussed in terms of offender characteristics and the context of maltreatment. These theories and

explanations for child maltreatment provide needed focuses to the subsequent selection of variables that comprise the conceptual framework.

Offender Characteristics

Physical Abuse and Emotional Maltreatment and Neglect

Early studies of physically abusive parents paved the way for the theoretical view that such behaviour was a sign of mental illness or biological predisposition that increases one's potential for violence and impulsive behaviour. This view was supported by predominant behavioural characteristics of abusive parents, which included chronic, multi-situational aggressive behaviour, isolation from family and friends, rigid and domineering interpersonal style, impulsiveness, and marital violence. Such parents were described as emotionally immature, to show low frustration tolerance, to have difficulties expressing anger appropriately, to have high expectations for their children (with little regard for the child's needs and abilities), and to possess deep-seated problems in self-esteem and/or personality adjustment that were related to problems in their family of origin[24]. Neglectful parents, in contrast, were described as having personality disorders, inadequate knowledge of child development and stimulation, and chronic patterns of social isolation and identification with a deviant subculture, such as drugs, alcohol, and crime[25].

This early descriptive approach to understanding maltreating parents came to be known as the psychopathology, or psychiatric, viewpoint. This view attempted to understand individual characteristics in relation to prior experience and current demands, and often placed greater significance on the parent than on any other factor as the principal cause of maltreatment. However, research efforts aimed at distinguishing maltreating from non-maltreating parents on the basis of personality dimensions were largely unsuccessful in supporting the view that such individuals suffered from an identifiable form of psychopathology or personality disturbance[26,27]. A review of studies involving abusive parents and matched comparison parents was conducted to determine whether relevant distinctions between these populations could be identified, but few studies differentiated between abusers and non-abusers on the basis of traditional measures of personality disturbance or psychopathology; however, child abusers were more likely to report stress-related symptoms, such as irritation, dissatisfaction, and health problems, which are linked to the parenting role[28].

Empirical studies involving comparison groups of non-maltreating parents focussed on the behaviour of family members, parental self-reports of their perceptions of their children, physical and emotional symptoms that may interfere with parental abilities, and emotional reactivity to stressful child-rearing situations. Studies reaffirmed earlier clinical reports of cognitive and behavioural differences in terms of such psychological characteristics as low frustration tolerance and inappropriate expressions of anger, social isolation from important sources of support, impaired parenting skills, unrealistic expectations of their children, subjective parental reports that their child's behaviour is very stressful, and descriptions of themselves as inadequate or incompetent in their role as parents[29]. These findings led to a greater awareness of contextual factors that may turn a high-risk individual or family into an abusive one. The importance of viewing psychological characteristics of abusive parents in relation to their role as a parent also became more evident, in addition to the family and social context.

Psychological processes, such as coping mechanisms or attributional styles, also remain important factors in abuse and neglect. Child maltreatment is a relational event that depends, to some extent, upon situational factors that elicit parental reactions. Maltreating parents share many common psychological and situational features, but these features do not differ significantly from sociodemographically-matched groups of non-maltreating parents[28]. For example, they often have had little exposure to positive parental models and supports, and their family backgrounds

were often difficult and marked by violence, alcoholism, and harsh family circumstances. As adults they find daily living stressful and irritating, and they prefer to avoid potential sources of support because it takes additional energy to maintain social relationships.

Refinements in both research and practice began to show that many incidents of child physical abuse were not necessarily maliciously or intentionally committed. Rather, it was most likely to emerge among those families who lacked the resources and skills to deal with everyday discipline and stress-management issues that are a part of child-rearing. Social scientists placed greater emphasis on psychological processes involving interactions among individual, family, and societal factors that might help to explain why some parents are abusive or neglectful and others are not.

Sexual abuse

Individual and situational conditions affecting sexual abuse were described by Finkelhor on the basis of theory and empirical study[28]. He proposed four offender characteristics as necessary pre-conditions to sexual abuse: 1) the motivation to sexually abuse; 2) overcoming internal inhibitors; 3) overcoming external inhibitors; and 4) overcoming the child's resistance. The first two conditions are necessary for abuse to occur, i.e., the perpetrator must be inclined to abuse and be uninhibited about it, which is consistent with the notion that the offender bears responsibility for the abuse.

The motivation to abuse a child sexually derives from an offender's sexual arousal to children, the blockage of appropriate outlets for sexual gratification, and the sexualization of unmet emotional needs (such as a need for power and control, narcissistic identification with the self as a young child, and unconscious re-enactment of childhood trauma). These individual needs may be fostered by societal practices such as the erotic portrayal of children in mainstream advertising and pornography.

The second precondition specifies that the offender must overcome internal resistance to sexually abusing a child. Impulsiveness, lower intelligence, psychosis and senility, lack of empathy for the child, and alcohol abuse are examples of offender characteristics that reduce inhibition. There are also society-level factors that reduce resistance to such offending, such as weak criminal sanctions against offenders to minimize deterrence, the acceptance of alcohol as an excuse for behaviour, and the cultural belief that family matters are private and at the parents' discretion. The offender's efforts to establish a relationship with the child, such as time alone or singling the child out as favoured or special, may also reduce internal inhibitors via a distortion of the caretaking role and blurring of interpersonal boundaries. Thus, a perpetrator may develop a sense of entitlement and privilege with a child, and may come to distort his parental role to include sexual instruction or role reversal.

The third precondition considers the need to overcome external barriers to sexual abuse. Factors that may increase a child's vulnerability to abuse include a parent who is absent, ill, overwhelmed, experiencing spousal abuse, or not emotionally close to or protective of the child; a lack of child supervision and monitoring; opportunities to be alone with the child (such as unusual sleeping or rooming conditions, babysitting, leaving the child unattended); marital dissatisfaction; socioeconomic disadvantage; and social isolation[29]. Additional society-level variables may include erosion of social networks, the lack of social supports to the mother, and barriers to women and children's rights.

The fourth precondition involves the offender's ability to overcome the child's resistance. An important factor here is the illusion of a trusting relationship, often where childcare is part of the perpetrator's responsibilities, as in the case of a biological or step-parent, coach, babysitter, religious leader, and so forth. Factors that make it more difficult for a child to rebuke abuse attempts include an emotionally vulnerable child (such as emotionally or physically deprived, a compli-

ant or quiet child), the use of coercion and/or seduction, the child having witnessed parental conflict, the lack of education about sexual abuse, and the social powerlessness of children. Children may respond out of a need for affection, a desire for money/gifts, pursuit of adventure, or sexual stimulation. Methods used to lower the child's resistance include friendship, playing games, giving rewards, hobbies or interests that appeal to the child, and using peer pressure. If subtle methods are not successful, coercion and violence may be used, often in a deceptive manner such as framing abuse as "discipline."

The Context of Maltreatment

Child-rearing practices are influenced by numerous cultural and situational factors that determine the level of conflict or cooperation in the emerging parent-child relationship. From a socialization perspective, child maltreatment is viewed not as an isolated social phenomenon or a psychological impairment of the parent, but rather as the product of socialization practices that sanction the use of violence and power-assertive techniques with family members [29]. Socialization practices are made up of community and societal norms of acceptable or tolerable child rearing methods, and are shaped by past and current expectations of what is an acceptable child-rearing environment. Many of these expectations are passed along from generation to generation with little outside influence and education. To understand how some families migrate toward abusive socialization patterns, the impact of cultural, community, and familial influences on child rearing patterns are discussed.

The context of child maltreatment is one of social and economic deprivation, which may be the force that transforms predisposed, high-risk individuals into maltreating parents[30]. As the social structure in which some parents live becomes less controllable or manageable (or is *perceived* to be so), the adult may rely more and more on abusive methods or neglectful withdrawal to control the irritating, daily events that he or she links to such stress.

Part of this impetus to expand the view of the causes of maltreatment to contextual factors beyond the individual was driven by nationwide survey studies documenting the role of poverty and family disadvantage on rates of maltreatment[31]. Similarly, findings concerning the social isolation and chronic stress of at-risk families led to the notion that isolation from support systems was a necessary, but not sufficient, condition of child maltreatment[32]. Child maltreatment was described in relation to economic inequality, due to the fact that it was reported more often among economically and socially disadvantaged families[33]. At the same time, the United States began to collect nationwide data on the socio-demographic characteristics of maltreating families reported to protection agencies, which revealed that maltreated children were twice as likely to live in a single-parent, female-headed household; four times more likely to be supported by public assistance; and more affected by stress factors, such as health problems, alcohol abuse, and wife battering, relative to other U.S. families with children[34].

This ecological viewpoint led to further modification and expansion of the definition and suspected causes of maltreatment. Rather than dividing parents into abusive and non-abusive (or neglectful) on the basis of psychological characteristics, this perspective advanced the notion that child maltreatment was more a function of its situational context than it was of an individual's personality. Child maltreatment was not viewed as isolated social phenomena or personality defects; rather, it was a symptom of a society that condones the use of violent methods toward family members in certain circumstances, that does not provide adequate services and basic needs for all its members, and which chooses to define maltreatment in relative rather than absolute terms. Inappropriate and abusive child-rearing practices were seen not only in relation to individual factors, but also as a function of social and cultural forces that establish the parameters of individual behaviour[35].

Part of the context of maltreatment involves interactions between the parent and child within a system that seldom provides alternative solutions (such as exposure to appropriate parental models, education, and supports), or clear-cut restraints (such as laws, sanctions, and consequences for the use of excessive force to resolve common child rearing conflicts). If parents lack the ability or adequate resources to cope effectively, the risk of poorly managing daily events and annoyances increases. Many first-time parents admit to the sometimes overwhelming and unexpected demands of parenthood, but the vast majority do not become abusive or neglectful because they have other compensatory factors available. However, failure to deal effectively with the demands of their role early on, both within and outside of the family context, can readily lead to increased pressure on the parent-child relationship and a concomitant increase in the probability of maltreatment.

These early patterns may progress to a second stage, whereby the parent's inability to cope effectively with child rearing demands further heightens their emotional arousal and strengthens their belief that their child is causing them undue stress. Because they are unfamiliar with more positive methods, and because coercive methods seem to work in the short-run (that is, the child stops misbehaving, or the parent relieves his or her tension or anger), parents learn to rely on coercion, threats, or avoidance as a means of responding to child-related stressors. Their children, too, may learn to be more demanding, even coercive, when interacting with their parents, because this is what they have learned to do from an early age. At this point the amount and intensity of uncontrollable events can seem overwhelming to the parent, which can unleash a floodgate of anger, frustration, or resignation that is most often directed at a child or spouse.

Over weeks or years, parents may become convinced that excessive punishment and force, or avoidances and escape, are absolutely necessary to control their child's behaviour. They adhere to the belief that if they let up their child will somehow destroy much of what they have remaining, and in effect take over control of the household. Similarly, in cases of neglect, parents may actively avoid coming in contact with the child, as a way to escape from further stress and aggravation. Under such circumstances child behaviour problems often worsen, accompanied by an increase in parental frustration and harsher attempts to control the child. Parents become caught in this vicious cycle of using coercive or avoidant methods in response to tension and irritation, which work at first but gradually become more and more ineffective[25].

Consequences of Maltreatment

This section discusses the underlying developmental processes affected by maltreatment and links these processes to the diverse negative outcomes. Disruptions in developmental processes include general developmental issues pertaining to the impact of child maltreatment, which overlap among the various forms of maltreatment but also have important differences. These areas of developmental disruptions include maltreated children's disturbances in relationship formation (such as attachment to caregiver and others), problems in regulating their emotions (which affect mood and behaviour problems), deficits in social awareness and peer acceptance, and cognitive and academic deficits. Maltreated children also suffer from chronic problems and disorders, which are most likely to receive the attention of health care providers and educators.

Children's development follows a course that is normally organized and adaptive, based on genetic and species-specific processes that have evolved over generations. Yet, environmental events can enhance or interfere with this established pattern in such a way that an individual may proceed along an unusual and less predictable course. Child maltreatment provides a strong case in point. The diverse actions or inactions that are described collectively as maltreatment usually occur in such a pervasive manner that children's development is

thrown off its normal course and becomes less predictable and adaptive.

Fortunately, children have a remarkable ability to adapt to both positive and negative circumstances, and some can resist or recover even from the negative effects of maltreatment once they are given proper opportunities and protection[36]. Adaptive functioning is an ongoing, dynamic developmental process that can change course, especially when challenged by unusual and harsh circumstances. Although maltreated children have increased risk for many adjustment and criminal problems, negative outcomes are evitable. This conclusion speaks to the significance of children's ability to adapt and use whatever resources or opportunities may be available to them to resist the harmful effects of such experiences. Several factors involved in adaptive versus maladaptive outcomes of abuse are considered in relation to the following theoretical considerations.

Developmental Psychopathology

Disturbance in the parent-child relationship or the family is one of the most widely implicated factors associated with children's developmental problems and psychopathology. For this reason, maltreated children have a much greater than average risk of developing emotional and/or behavioural problems as a longstanding consequence of parental treatment. However, the manner in which parental abuse affects children's ongoing development is a subject of debate and uncertainty, due primarily to the difficulty of studying such a complex phenomenon. Understanding the possible effects of child maltreatment requires a familiarity with the literature on child development and psychopathology, since these areas have already established some of the critical parameters for studying the child in the context of the family and community.

Developmental psychopathology provides a useful framework for organizing the study of child maltreatment around milestones and sequences in physical, cognitive, social-emotional, and educational development. This perspective serves as an organizing framework to describe this dynamic, multidimensional process leading to abnormal outcomes in development, and is a way of integrating different approaches around a common core of phenomena and questions. Developmental psychopathology emphasizes the role of developmental processes, the importance of context, and the influence of multiple and interacting events and processes in shaping adaptive and maladaptive development. This broad approach does not replace particular theories, but rather is intended to sharpen awareness of connections among phenomena that may otherwise seem haphazard and unrelated[37].

A central tenet of developmental psychopathology states that an adequate understanding of abnormal or maladaptive behaviour involves an understanding of normal developmental processes, including extremes and variations in developmental outcome. This underscores the importance and complexity of family, social, and cultural factors in predicting and understanding developmental changes from a multi-disciplinary, integrated perspective. The influence of a developmental psychopathology perspective is prominent in the study of child maltreatment because it adds more developmental relevance and richness to categorically-based disordered outcomes.

Theories of Stress and Resilience

Children may face various sorts of stress and risk in their lives, some chronic and pervasive, yet they learn to negotiate these situations in many different ways and with many different outcomes[38]. Young children who may have initially achieved normal developmental milestones can show a dramatic downturn to their developmental progress as a result of chronic or acute maltreatment and similar types of stress. Consequently, core developmental processes are impaired, resulting in emotional and behavioural problems ranging from speech and language delays to criminal behaviour.

Direct and Indirect Stressors

In addition to the direct harmful effects of maltreatment, children may suffer the indirect effects of numerous life events and secondary stressors that are affected by maltreatment. Disclosure of sexual abuse, for example, gives rise to both immediate and long-term events that play a role in reducing an individual's coping resources relative to new demands. These secondary stressors, sometimes bolstered by intrusive recollection of traumatic experiences, give rise to a chronic, stress-filled life style that makes habituation to the original stressor(s) more difficult. The sources of such stress may be several steps removed from the original events themselves, such as when a child must cope with parental inconsistency, changes in family residence, sibling distress, etc., due to the aftermath of wife abuse, parental separation, or disclosure of sexual abuse[39].

Stressful events in the family affect each child in different and unique ways. However, certain stressful situations trigger more intense stress reactions and consequences than others. Child maltreatment is certainly among the worst and most intrusive forms of stress, on a par with war, domestic violence, and inadequate shelter and clothing. It impinges directly on the child's daily life, may be ongoing and unpredictable, and is often the result of actions or inactions of persons in whom the child trusts and depends. However, even traumatic events like abuse, neglect, emotional deprivation, and related forms of maltreatment do not affect children in a predictable, characteristic fashion. Rather, their impact depends on many factors, especially the child's make up and available supports[39].

Stress has received a major portion of blame for serving as the catalyst that turns an unpleasant situation into an abusive one. Theories cannot fully explain child maltreatment without the addition of the concept of stress that gives rise to maladaptive coping responses, since maltreating parents are not abusive under all, or even most, circumstances. What seems to be responsible for aggravating the level of conflict between family members is not any particular type of stress, but rather the presence of a stress-filled environment that may originate from a number of sources, especially in relation to socioeconomic disadvantage.

Stress appears in many different forms for different individuals, and can best be understood as events or demands that create an acute or chronic imbalance for the individual or the family system. This imbalance, in turn, is typically met by counter-pressure from the individual's coping efforts to return him or herself to a more comfortable state of equilibrium. The conclusion drawn from studies of stress and child development indicate that the negative or positive impact of a stressful event depends to a large extent upon the degree of interruption and disarray set in motion by the event, and the presence of psychological and physical buffers that regulate the harshness of the stressor in tangible and intangible ways[40]. As additional stressors accumulate, children become less able to resist the harmful effects, which can lead to adaptational failure. However, a child's method of adapting to environmental demands at one point in time (such as avoiding an abusive caregiver) may later compromise the child's ability to form relationships with others or to be more flexible in their style of adaptation.

Children's Coping

Maltreated children experience ongoing uncontrollable events that challenge their successful development and adaptation in a pervasive manner and pose a threat to their core psychological well-being. They not only have to face acute and unpredictable parental outbursts or betrayal, they also have to adapt to environmental circumstances that pose developmental challenges. These influences include the more dramatic events, such as marital violence and separation of family members, as well as the mundane but important everyday activities that may be disturbing or upsetting, such as unfriendly interactions, few learning opportunities, and chaotic lifestyles.

Similarly, children who are sexually abused undergo pronounced interruptions in their developing view of themselves and the world, resulting in significant emotional and behavioural changes indicative of their attempts to cope with such events. Because the source of stress and fear is centralized in their family, children who are maltreated are challenged on a regular basis to find ways to adapt that pose the least risk and offer maximum protection and opportunity for growth.

Attribution Theory

The manner in which maltreatment affects children's developing view of themselves and their world has been considered. Victims' lingering, negative evaluations of themselves, their families, and the world in general may be understood in terms of their original reaction to traumatic episodes involving personal danger, in which responding was futile. Such experiences can lead to an expectation of future helplessness, whereby the victim comes to believe that there is little that he or she can do to prevent or gain control over stressful situations[41]. The result is the development of a passive response style in a variety of new situations. Thus, an abused child may learn to attribute stressful, uncontrollable events to something about him or herself as opposed to something about the situation or circumstances, which makes the child more prone to a loss of self-esteem. Similarly, if the child perceives the cause to be persistent across time (i.e., stable) versus transient (i.e., unstable), then he or she is more prone to chronic helplessness.

Theories of Resilience

Child maltreatment, similar to other forms of adversity and trauma during childhood, does not affect each child in a predictable or consistent fashion. To the contrary, the impact of maltreatment depends not only on the severity and chronicity of the events themselves, but also on how such events interact with the child's individual and family characteristics. Individual children may be resilient to some specific stressors but not others, and resiliency may vary over time and across contexts[42].

Personality characteristics such as positive self-esteem and sense of self are good predictors of resilience among maltreated children. As well, children may be protected in part from the harmful effects of maltreatment if they have a positive relationship with at least one important and consistent person in their lives who provides support and protection. This person is typically the mother in cases of sexual abuse[43], but he or she could also be the identified maltreating parent, something that may be hard at first to reconcile. However, children do not think of their parents as "abusive", they just adapt to their own experiences as best as possible. Loyalty to one's parents is a powerful emotional tie, so from the child's point of view a parent who at times yells, hits, and castigates may at other times be a source of connection, knowledge, or love[44]. Maltreated children may have the hardest time adapting appropriately to any form of stress to the extent that they are deprived of positive adult relationships, effective models of problem solving, and a sense of personal control or predictability.

CONCEPTUAL FRAMEWORK FOR CHILD MALTREATMENT SURVEILLANCE

Organization and Approach

Progress in defining and explaining the causes and consequences of child maltreatment forms the basis for a conceptual framework covering individual, family, community, and societal factors relevant to child maltreatment surveillance. This conceptual framework is modelled after Health Canada's pioneering work in identifying and defining key determinants of health. Theoretical and empirical findings from the literature are organized into separate sections according to key determinants of health that apply to this issue. Each section is discussed in terms of its composition of theoretically important variables, including some undetermined factors that merit future attention, such as the economic costs of child maltreatment.

Selected Key Determinants of Population Health

The Health Canada document, *Population Health Promotion*[45], identifies nine key determinants of health, which have been collapsed into the following six categories that are most relevant to child maltreatment surveillance:

Income and Social Status

The relative distribution of wealth, rather than the amount, is seen as a key factor that determines health status. Similarly, social status affects health by determining the degree of control people have over life circumstances and, hence, their capacity to take action. In terms of surveillance, there is strong theoretical and empirical support for the significance of income and social status on rates of child maltreatment, such as the

Figure 3
Conceptual Framework Overview

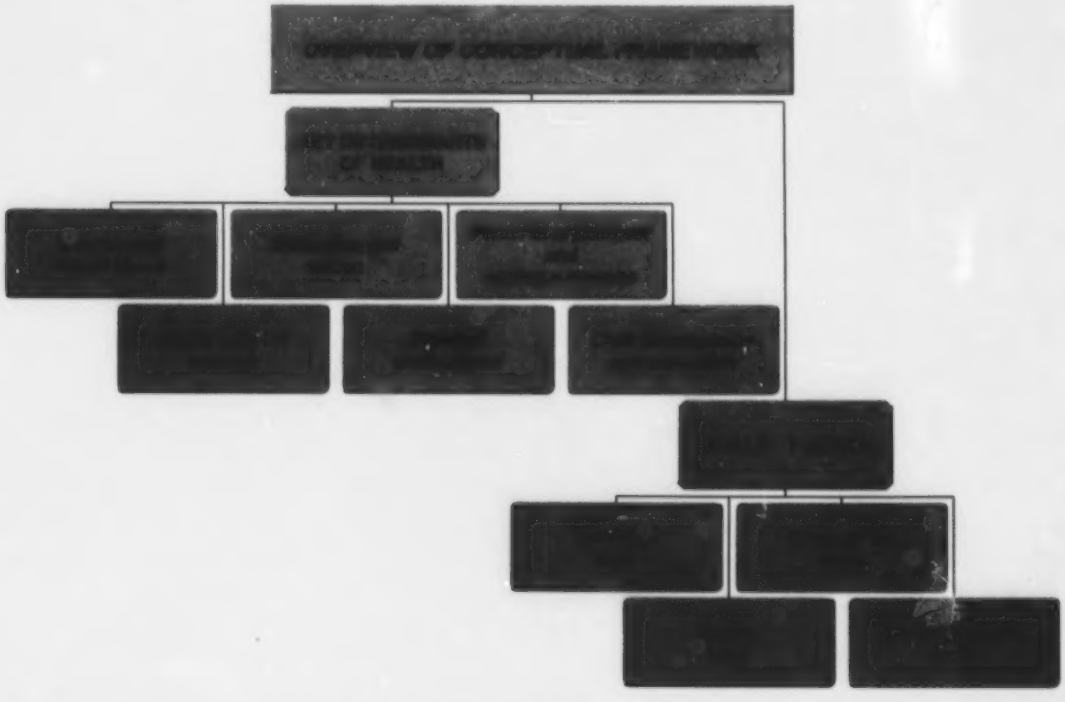


Figure 3 shows an overview of the conceptual framework, including key determinants of health and levels of action discussed in the following sections of the report.

role of poverty, the neighbourhood context, and the importance of social policies to thwart discrimination and inequality.

Social Support Networks

Support from families, friends and communities is important in helping people deal with difficult situations and maintaining a sense of mastery over life circumstances. The child maltreatment literature has documented the importance of such social supports in regulating the stress and isolation of families, as well as the manner in which families in need access necessary resources. Surveillance of social support networks at the family level, for example, may involve information on number of moves and disruptions faced by children, as well as opportunities for emotional and spiritual support as perceived by parents and children. At the community level, surveillance can include information on alternative child care and placements, how families and children access available resources, and similar factors.

Education

Meaningful and relevant education equips people with knowledge and skills for daily living, enables them to participate in their community, and increases opportunities for employment. It is important to document community and school-based efforts to make children and adults more aware of the signs and effects of maltreatment, as well as actions to take. Similarly, efforts at training, school policy, availability of prenatal and early childhood classes, and judicial and legislative actions to deter maltreatment would be valuable for surveillance purposes.

Physical Environment

Factors such as the type of housing and community safety have a major impact on health, and have been implicated in rates of child maltreatment. Thus, it is important to keep track of family and community-level environmental factors such as homelessness, conditions in the home that impair safety and healthy development, and neighbourhood structure and safety.

Personal Adjustment and Coping Skills

Efforts to improve one's health and personal adjustment help prevent disease and promote self-care, while effective coping skills enable people to be self-reliant, solve problems and make choices that enhance health. Surveillance of personal adjustment and coping skills falls at the level of the individual child and adult, and may take the form of documenting the nature of current demands and available alternatives faced by children and parents, including health problems, stress and coping resources, and psychosexual adjustment.

Child Development

Prenatal and early childhood experiences have a significant effect on subsequent health, and have been identified as playing a critical role in the occurrence and prevention of child maltreatment. Healthy child development depends on all levels of action, from the individual child's developmental status and impairments, to the adult offenders' child-rearing abilities, the family environment, and community and cultural attitudes and responses to the underlying factors that contribute to maltreatment.

Levels of Action

A multidimensional systems approach to understanding child maltreatment is built on several levels of concern and action. A conceptual framework of child maltreatment surveillance must include conceptually distinct levels of individual, family, community, and cultural factors. This involves investigation of critical antecedents, significant historical or developmental characteristics of the adult and child, the nature of the act and its impact on the child, the consequences that maintain such behaviour, the nature of the family or caregiving context, and the larger social system in which abuse occurs.

Individual Level (Adult and Child)

Abusive parents often lack the skills and resources necessary to cope effectively with child-rearing and other stressful life demands, which may lead to a greater number of child behaviour problems. Individual characteristics of the child (such as difficult behaviour) also may contribute to or maintain the adult's behaviour.

Family Level

Determinants of health at the family level include both demographic and family structure components. Childhood maltreatment often occurs in the context of multi-problem homes and neighbourhoods, where socioeconomic disadvantage, marital distress, domestic violence, and related forms of conflict or pathology have a major influence on child development. Family factors are important considerations across many of the determinants of health, such as social support networks, physical environment, and income and social status.

Community Level

Although child maltreatment is certainly not limited by the boundaries of socioeconomic status, the problem must be considered in the context of environmental stress and isolation from resources. The availability of adequate social assistance, for example, helps to combat the effects of poverty and restrictions in the child's expectable environment, such as lack of adequate daycare, safety, and housing. Adults who are living below the poverty level, moreover, suffer more from the effects of individual and family problems, such as substance abuse and emotional disorders. Thus, surveillance at the community level includes such issues as access to resources, employment and working conditions, educational and training opportunities, neighbourhood safety, and child protection resources.

Societal/Cultural Level

This macro-level component to the framework involves the identification of broader social and cultural factors affecting maltreatment, such as cultural acceptance of corporal punishment, willingness to learn alternatives to corporal punishment, awareness of sexual abuse, laws and statutes relating to children's safety, mental health, and pornography, and public awareness campaigns directed at reducing the overall prevalence of child maltreatment. These factors pose a challenge for surveillance due to their broad and diverse presence in Canadian culture. Ways to understand cultural influences in relation to child maltreatment are described for several of the key determinants of health.

Income and Social Status

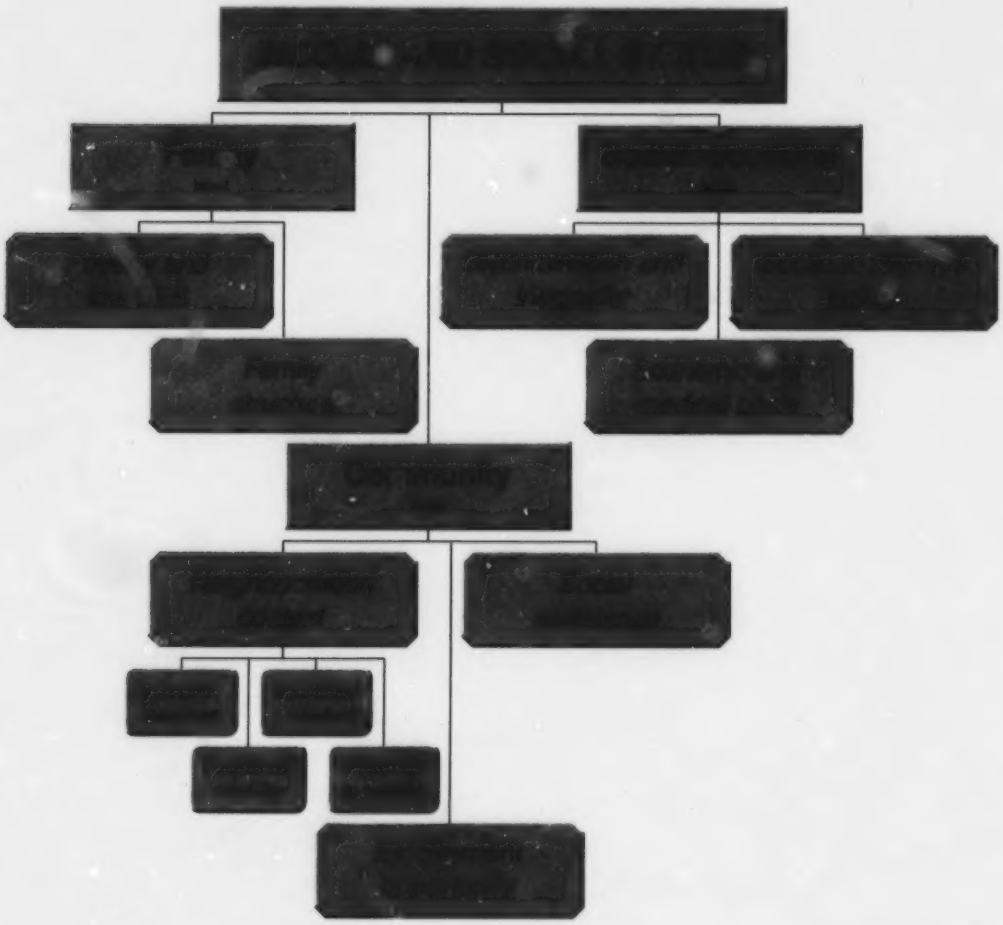
Individual and Family Level

Poverty and Low Socioeconomic Status

Child maltreatment is affected by several major environmental conditions, of which low socioeconomic status (typically defined as family incomes below the poverty line, under-employment, and low education) plays a significant role. Childhood poverty is a disturbing reality for about one in five children in Canada[46]. Growing up with poverty has a substantial effect on the well-being of children and adolescents, especially in terms of impairments in learning ability and school achievement[47]. Poverty has a significant, yet indirect, effect on children's adjustment most likely because of its association with such negative influences, particularly harsh, inconsistent parenting and elevated exposure to acute and chronic stressors[48].

Child maltreatment is more common among the poor and disadvantaged, especially for neglect[49]. U.S. figures show that the reported incidence rate for all forms of maltreatment rises from 42/1,000 (averaged across all SES levels) to 99/1,000 children among those from the poorest families (earning less than $15,000/year). This rate is three times greater than that of children from moderate income families ($15,000 - <$30,000/year), and 25 times higher compared to children in families in the highest income bracket (>$30,000/year)[3]. In the Ontario incidence study, at

Figure 4
Income and Social Status



least 36% of investigated families depended on social assistance as their primary source of income. Not surprisingly, source of income was related to type of maltreatment: neglect was more prevalent among families dependent on social assistance than among those with full-time employment (43% vs. 13%)[13].

Recent studies suggest that the connection between child maltreatment and poverty is not likely due to a reporting bias, since it has remained unchanged for the last 20 years, despite increased awareness and reporting[50]. What it does imply, however, is that the economically-based context of maltreatment— restricted childcare opportunities, crowded and unsafe housing, lack of healthcare, and so forth — are a powerful contributor to the high incidence rates. Despite these powerful socioeconomic forces, however, maltreatment appears to have a significant impact on child development above and beyond the influence of stressful socioeconomic circumstances alone[51].

Family Structure

Family structure is also connected to the probability of child maltreatment. Children living with a single-parent are at significantly greater risk of both physical abuse and neglect, most likely because of

added stress, fewer resources and opportunities to share child-rearing burdens, as well as lower SES than two-parent homes. Children living in father-only homes, in particular, are almost twice as likely to be physically abused than those living with mothers alone[3]. Similarly, maltreatment — especially physical and educational neglect— is more common in larger families, where additional children in the household mean additional tasks, responsibilities, and demands.

Unlike physical abuse, sexual abuse has not been associated with any particular constellation of family constructs that can account for its prevalence, such as poverty and unemployment; however, elevated risk for sexual abuse is believed to exist among families who are troubled or in transition, as for example where a parent is absent or unavailable, when parents themselves are in conflict, or when a stepfather is present[52].

Community Level

Neighbourhood Context

Child maltreatment is closely linked to structural aspects of the neighbourhood and community. Variation in rates of officially reported child maltreatment was shown to relate to four determinants of community social organization: economic and family resources, residential instability (a measure of the degree of movement in and out of the neighbourhood, such as the percentage of households that moved in last year); household and age structure, and geographic proximity of neighbourhoods to concentrated poverty[53]. These important dimensions of neighbourhood context reflect the degree of breakdown of community social control and organization, which in turn relate to reports of child maltreatment. Thus, children who live in neighbourhoods characterized by poverty, excessive numbers of children per adult resident, population turnover, and the concentration of single-parent families are at highest risk of maltreatment.

Employment Opportunities and Loss

The role of unemployment and job opportunities is significant, similar to the link between poverty and child maltreatment[54]. Using unemployment rates for two different metropolitan areas, increases in the rates of physical abuse were preceded by periods of high job loss[55]. Male unemployment rates accounted for two-thirds of the variance in total abuse and neglect rates among registered cases of maltreatment in Glasgow, Scotland[56]. These studies are correlational only, and cannot explain the underlying mechanisms that account for this connection. Nonetheless, the relationship between unemployment and child abuse and neglect is significant, making employment opportunities and job loss critical factors for surveillance.

Public Assistance

Public assistance, both in the form of monetary aid and social support, is a related component of income and social status. As noted, child maltreatment rates are higher in poor neighbourhoods that have fewer social resources, compared to other economically deprived neighbourhoods that have adequate social assistance for families. Parents in areas having higher rates of maltreatment tend to use resources only in response to crisis, and fall back on formal public agencies and social assistance when absolutely necessary. Surveillance of public assistance might include schedules of welfare assistance by region, ratio of public agencies serving families to the neighbourhood population, and related forms of access to resources.

Societal/Cultural Level

Discrimination and Inequality

Child maltreatment usually occurs in the context of multi-problem homes and neighbourhoods, where poverty and family dysfunction have a major influence on child development. The most prominent social and cultural dimensions contributing to maltreatment stem from poverty, social isolation, and wide acceptance of corporal punishment (discussed below). These factors stem from inequality, which is arguably the major

socio-cultural factor contributing to maltreatment not only of children, but of many adults and members of minority groups as well. The extent to which a society deems any particular group as less worthy of recognition and economic or political support represents the extent to which that group is vulnerable to violence and a host of other indignities[57].

Economic and Medical Costs

Cost analysis related to child maltreatment was seen as an essential undertaking by the U.S. Advisory Board on Child Abuse and Neglect[2]. Surveillance data on the costs connected to basic social and economic supports and child maltreatment would serve to clarify the suspected sort and long-term costs to society in material and human resources. Child maltreatment cases have the highest costs for admission to pediatric intensive care, especially those involving younger children (<nine months of age) with severe injuries[58]. Hospital charges average US$35,641 per child abuse case (range US$12,200–$115,600), with a daily average cost of US$52,945. Sadly, admissions due to child maltreatment also had the highest mortality rate. Injuries due to maltreatment require more costs and services than motor vehicle accidents on a case by case basis, most likely because of the reluctance of their caregivers to seek help right away. To put this in further perspective, the average cost for one child in intensive care for one day is greater than the annual salary of a home health visitor.

In addition to the cost of acute medical services, economic and medical costs related to the long-term physical and emotional impairments resulting from child maltreatment merit surveillance. Studies of the cost of maltreatment need to include the costs of future medical care, legal and social investment, and loss of earning capacity and quality of life.

Policy on Social Assistance

Related to community factors noted above, federal, provincial/territorial, and municipal policies concerning welfare and related public assistance should form part of the surveillance capacity. Such policies set the direction and financial support for family assistance, which is closely linked to income and social status variables affecting the rate of child maltreatment. Such policies may take the form of legislative change at the federal or provincial level, as well as the administration of funds for families at the municipal level.

Social Support Network

Individual and Family Level

Social Isolation and Perceived Support

Social isolation is a commonly noted feature of maltreating families. Social isolation is not a singular factor, but rather a set of variables linked to the parent's perception of support and their informal and formal networks[59], many of which fit within a surveillance capacity. Such families often lack significant social connections to others in the extended family, the neighbourhood, the community, and to the social agencies that are most likely to provide needed assistance[60]. Social isolation is commonly associated with other stressful living conditions, such as a lack of adequate daycare, peer groups or close friends, and adequate housing[61].

These factors play an indirect, yet significant, role in the early formation and healthy establishment of a positive versus abusive parent-child relationship. As a result, various forms of maltreatment are difficult to detect, and community agents who could promote healthy parent-child relationships are less likely to be influential. Neglecting families are especially prone to such isolation and insularity, which may be tied to the parents' significant interpersonal problems[62]. Similarly, incestuous families tend to protect the family secret in order to maintain the power and control of the abuser. This is achieved through social isolation, restricted personal autonomy, and deference to strict morality and religiosity. Like other maltreating families, these characteristics reflect a climate of domination and abuse of power in which children are

Figure 5
Social Support

powerless at controlling unpleasant events. Finally, the social life of the child can be restricted as a result of the need to keep the home situation out of public view.

Moves and Disruptions

Maltreating families move twice as often as non-maltreating families from similar socio-economic backgrounds[63]. In addition, maltreated families have less stability in terms of parental figures, which can disrupt the child's developing sense of trust and consistent supports. Disruption in education due to frequent moves, school transfers, suspensions, and tardiness, may be responsible for the academic delays noted among some abused children.

Child Custody and Visitation

No data currently exist on the relationship between child custody arrangements and maltreatment. However, drawing from the literature on the effects of separation and divorce on children's development and risk of adjustment problems, such events are an important consideration as part of a comprehensive surveillance plan. In particular, we need to know whether children are at an increased risk of maltreatment prior to or following parental separation or access visits, similar to the findings on violence against women[64]. These data might include the child's primary residence, visitation arrangements, inter-parental conflict concerning such arrangements, and child support arrangements.

Community Level

Access to Resources

Families in need receive or request few or inadequate community services, especially in advance of an incident of maltreatment. High-risk parents show a marked reluctance to seek help until it is forced upon them or the problem becomes major[65]. The degree of accessibility to existing services may play a role in this respect. In practical terms, surveillance might include individual and family access to public transportation, suitable forms of communication, eligibility requirements for various community services, language barriers, and other qualifying characteristics that restrict or improve access to resources.

Alternative Care and Child Placements

The number of suitable alternative care placements for maltreated children and those at risk is an impor-

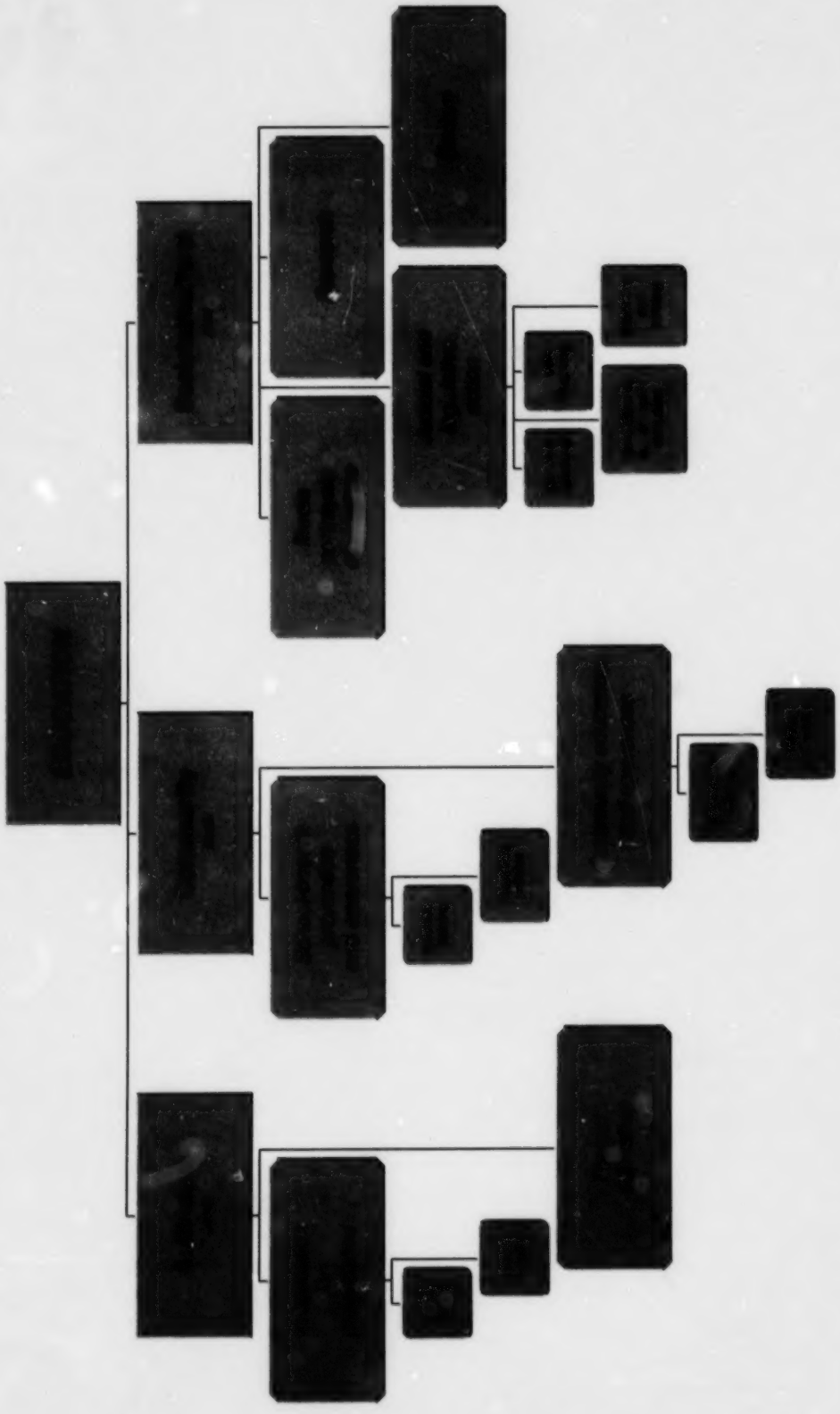


Figure 6
Education

tant social support component. Recruitment and training of foster parents, availabilities of specialized foster care homes, and kinship care all warrant surveillance consideration. Minimal standards and expectations of caregivers for the appropriate care of children can be monitored in accordance with community norms and expectations, providing useful data for service planning.

Opportunities for Disclosure

How children or adults disclose maltreatment is also a critical factor in its initiation and continuation. Children are often hesitant to disclose incidents of sexual abuse because of their relationship to the abuser, as well as implied or imagined negative consequences of telling, feelings of guilt, self-blame, stigmatization, and isolation. Children's own accounts of how they disclosed sexual abuse indicate that disclosure involves a gradual decision-making process that involves recognizing the behaviour as wrong, overcoming inhibitions to tell and suppressing fear, deciding when to tell, and deciding who to tell[66]. Opportunities for disclosure of child sexual abuse and other forms of child maltreatment may be fostered through community and school-based education and awareness, professionals, and similar avenues of support for children.

Education

Individual and Family Level

Preparation for Parenthood

Surveillance factors include prenatal classes, home visitation programs, and similar educational efforts to assist new parents in their new role and strengthen the parent-infant relationship. The importance of establishing positive early beginnings for new, inexperienced parents and their infants has received empirical support[67]. Such programs aim their interventions either during pregnancy or shortly following birth, to provide new parents with basic knowledge of child care and child development. Supplemental goals may also include social support, job training, and child management and early childhood stimulation.

Formal Education Achievement

Surveillance of formal education should be part of the conceptual framework, for educational attainment has been linked indirectly to child maltreatment[8]. In addition to highest grade completed, such surveillance may include the availability and completion of classes in family studies and similar topics.

Community Level

School-based Awareness Programs

Some communities provide educator training on child maltreatment for teachers and administrators, in conjunction with specific policies for reporting maltreatment. Programs usually address ways to teach children about unwanted touch, with an emphasis on children's right to control their own bodies, safe actions to take in a potentially abusive situation, and the importance of telling a trusted adult if touched in an inappropriate manner[68].

Community Education and Awareness

Communities have also begun to implement policies and procedures that decrease perpetrator access to potential victims. Such activities may include ways to verify credentials and references of new employees, volunteers, and so forth in a manner that serves both the rights of the child and the rights of the individual. Surveillance may also include the extent to which communities are prepared to assist and educate community members following child abuse disclosures, especially involving multiple victims or high profile offenders.

Media information, such as informative, non-alarming articles that describe the nature of child maltreatment in simple terms, encourages awareness of children's concerns. Children's vulnerabilities, especially those with special needs and those from parent-absent homes, may be described, to encourage parents to be vigilant of their children's whereabouts. Finally, public awareness of the consequences of abuse as well as deterrents could be surveyed, including publicity of trials and sentencing. In addition to raising awareness

among society as a whole, attention needs to be paid to professional training. This can be accomplished through education and training programs at both pre and post qualification level and by providing opportunities and mechanisms which allow professionals to meet together and discuss these issues.

Societal/Cultural Level

Judicial and Legislative Action

Legislators are responding to the growing public concern over the victimization of children, spouses and the elderly[69]. More federal and provincial laws related to domestic violence have been enacted in the last 25 years than in the entire previous history of jurisprudence. Education and training of the judiciary are important, since judges are a key component in the legal system's attempt to deal with maltreatment and domestic violence. The attitudes they hold and express in regard to the cases that come to their attention convey powerful messages about our social values. More education and an increased awareness of the problem of child maltreatment on the part of the judiciary also assist in proper criminal sanctions, and in the importance of expert testimony on topics such as sexual abuse symptomatology, reliability of allegations of abuse, patterns of disclosure and recantation, competency of children to testify in court, suggestibility and memory for abusive incidents.

Availability of pornographic materials also forms part of the conceptual framework. Societal and community norms concerning the availability of pornographic materials may influence the prevalence of sexual abuse in particular, both in terms of children's exploitation as well the possibility of increasing interest in deviant sexual practices[70].

Media Portrayals of Explicit Violence

Studies suggest that the current level of interpersonal violence in North American society has been affected by the long-term effects of childhood exposure to a steady diet of dramatic media violence[71]. Media violence is a contributing societal factor to the learning of aggression and violence in children, and should be considered in future surveillance planning. As well, there is a growing public concern about the negative effects of violent video games and unfiltered Internet sites on the behaviour of children and youth, although research studies of these issues are not presently available.

Sexism

Stereotypical views of women as submissive and men as dominant are reinforced by many of the media portrayals of violent and nonviolent acts. Pro-aggressive attitudes and beliefs are modeled by aggressors and sometimes the victims themselves, again reinforcing one's belief that violence is acceptable. The Canadian Panel on Violence Against Women[64] examined socio-cultural factors in some detail, and highlighted the need to expose abuse of power in a wide variety of society's major institutions, such as the health care system, the legal system, the military, and the educational system. The panel concluded that society must undergo dramatic changes before violence against women and children will end.

Research

Government funding for research, evaluation, and curriculum development is an important surveillance factor. Specific research priorities that create prosocial environments for child development and opportunities for youth at risk exemplify this strategy.

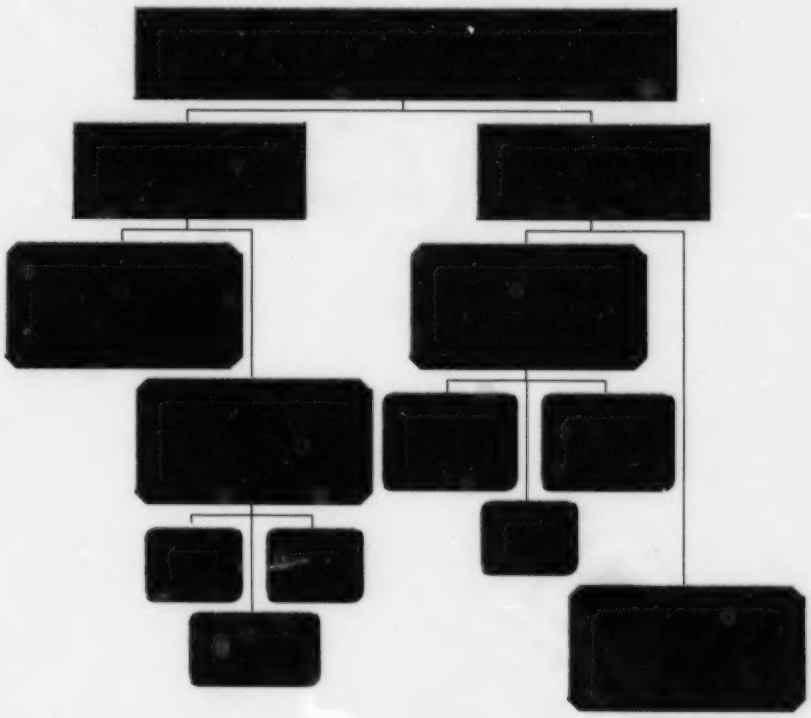
Physical Environment

Family Level

Homelessness

Lack of suitable shelter and a stable family environment are major issues facing some young children today. Homelessness overlaps with many of the income and social status variables noted previously; for example, 88% of homeless families in the United States are headed by women. Homelessness is also associated

Figure 7
Physical Environment



with increased health care usage and greater child maltreatment. A recent U.S. study showed that there was significantly more neglect and foster care placements among homeless children than among socioeconomically matched families with suitable shelter[72]. Although Canadian figures on homelessness are lacking, efforts to define, count, and assist the homeless are currently being undertaken by the Canada Mortgage and Housing Corporation[73].

Conditions in the Home

Child maltreatment, neglect in particular, is associated with a lack of basic necessities that keep children safe and healthy. In a review of accidental and non-accidental child injuries, poverty, family chaos and unpredictability, household crowding, and frequent residence changes were found to be characteristic of both unintentional child injuries as well as child maltreatment, suggesting that risk of injury is amplified as the number of such stressors increase[74]. Home safety covers a wide range of important features, such as exposure to lead or other toxic substances, exposed electrical wiring, water temperature set to above 49°C, improper storage of medications or firearms, disrepair, and unsafe heating appliances. Similarly, home cleanliness can pose a hazard to children's health and safety if parents do not properly look after pets, laundry, dishes and similar day-to-day chores. Degree of privacy may also contribute to children's safety, especially from sexual abuse. Privacy may not be available in terms of physical living space in some instances, but can be accomplished by parental recognition of children's right to privacy, and by establishing and respecting personal boundaries based on a child's level of development.

Community Level

Neighbourhood structure

Neighbourhood structure reflects a family's physical environment at a broader level, and includes measures of instability and proximity to poverty noted previously. It is also determined on the basis of an aggregated measurement of other important factors, all of which are closely associated with income and social status[75]. Related to instability is the extent of tenure of families in the neighbourhood, such as the percentage of households remaining in their current residence for less than 10 years. Neighbourhood structure can also be assessed in terms of the child care burden (the ratio of children to adults, males to females, and percentage of elderly population) and impoverishment (percentage of households that are female headed, the poverty level for the neighbourhood, rate of unemployment, percentage of vacant housing units, and population loss).

Neighbourhood Safety

Physical environment at the community level includes indicators of community safety. Community violence (such as crime, assaults, and theft) and child maltreatment are mutually influential[76]. Maltreated children are more likely than non-maltreated children to live in dangerous neighbourhoods, where they are exposed to further violence. The compound effect of maltreatment and exposure to community violence remains an important issue for future surveillance efforts.

Personal Adjustment and Coping Resources

This section of the conceptual framework looks at personal adjustment and coping resources in relation to child victims and adult offenders. Much of the research on child maltreatment has focused on the psychological factors that cause such behaviour, as well as those that are significantly affected over the lifespan. Major findings that have implications for surveillance capacity are highlighted.

The section begins by describing the impact of child maltreatment across the lifespan. The impact of maltreatment is organized in relation to major consequences that affect children's normal development. These consequences include information on acute physical and psychological symptoms of maltreated children, social behaviour, psychological and psychosexual adjustment, and academic performance. The literature on maltreating adults is then reviewed and described in relation to several relevant dimensions: maltreatment history, stress and arousal patterns, psychosexual problems (including deficits in relationship formation), and physical and psychological health (including personality disorders and substance abuse).

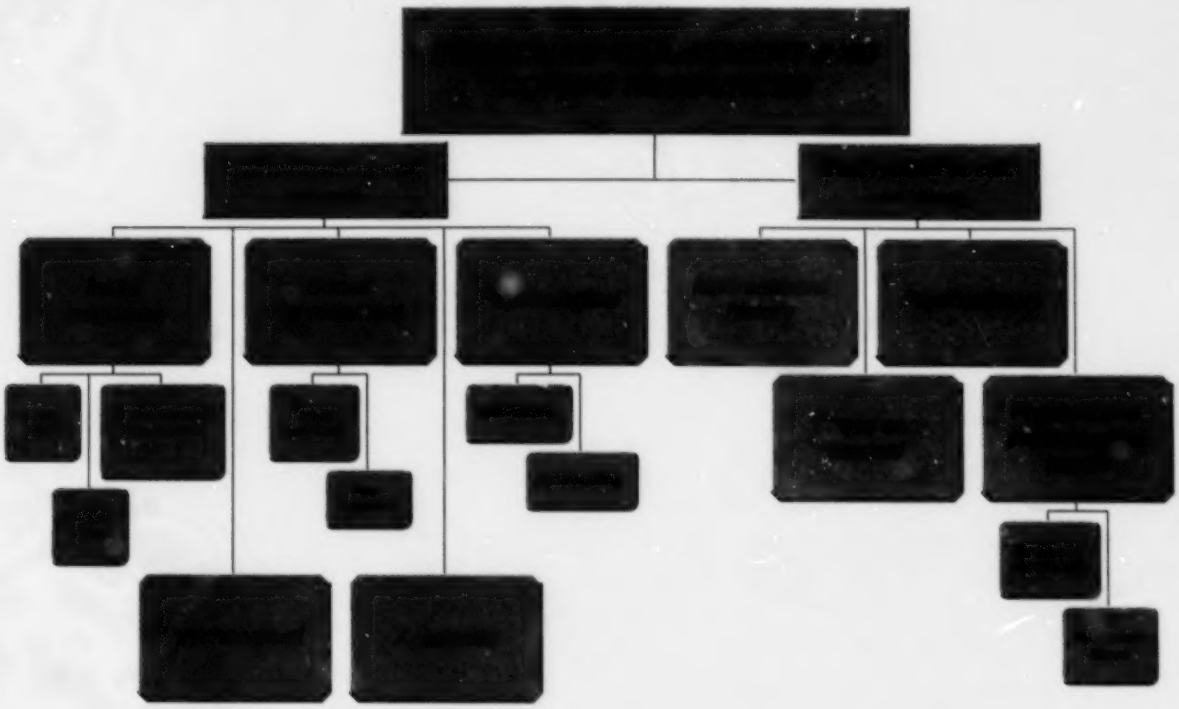
Individual Level: Child Victim

Child maltreatment harms critical areas of development, such as attachment to the caregiver, self-control, moral and social judgments, among many others. These developmental disruptions and impairments set in motion a series of events that increase the likelihood of adaptational failure and future behavioural and emotional problems. Although not all abused children who face these developmental challenges will develop a form of psychopathology, they are at a much greater risk for significant emotional and adjustment problems, including aggression and violence[77].

Initial Outcomes

Maltreated children may present with a variety of physical, emotional, and behavioural symptoms indicative of acute distress or injury. Some of the more prominent, acute physical signs for children who have been physically abused include external signs of physical injury, ranging from bruises, lacerations, scars, and abrasions, to burns, sprains, or broken bones. As well, internal injuries may be present, such as head injury (from violent shaking or contact with a hard object), bone fractures, and intra-abdominal injuries (e.g., ruptured liver or spleen). As well, suspicious or known child deaths relating to abuse or neglect may result, which requires the establishment of a uniform, national

Figure 8
Personal Adjustment and Coping Resources



classification system to permit accurate sharing of information[78].

Children who have been physically or emotionally neglected may show fewer overt signs of physical injury or poor development, with the exception of failure to thrive[79]. Neglected children may also show signs related to poor dental hygiene, nutrition, cleanliness, and proper dress. Children who have been sexually abused may have their physical health compromised by urinary tract problems, gynecological problems, sexually-transmitted diseases (including AIDS), and pregnancy[8]. Other acute physical symptoms or signs noted among sexual abuse victims include headaches, stomachaches, appetite changes, vomiting, and sensitivity to touch in specific areas[80].

Emotional and behavioural signs of child maltreatment are wide ranging among physically abused children. Given the lack of adult supervision and guidance, the neglected child's exploratory activity lacks structure, focus, and safety. Neglected toddlers show little persistence and enthusiasm, much negative affect and noncompliance, and little positive affect, yet they remain highly reliant on their mothers[81]. As preschoolers, neglected children show poor impulse control and are highly dependent on teachers for support and nurture[82].

About one-third of sexually abused children show no overt symptoms, and two-thirds show significant recovery during the first 12-18 months following the abuse, although researchers and clinicians acknowledge the possibility of delayed emergence of symptoms[24]. Some of the important emotional signs of sexual abuse include: general and abuse-specific fears, emotionally over or under-reactive (increased anger, anxiety, fatigue, depression, passivity), difficulties focussing and

sustaining attention, and withdrawal in interest and participation from usual activities. These symptoms of distress may be associated with a decline in school performance, behaviour, and peer relations. Behavioural symptoms may also be present, such as regression (bed-wetting, enuresis, encopresis, clinging, excessive crying, tantrums, fearfulness), sleeping problems and nightmares, self-destructive behaviours (self-injury, risk-taking behaviours), hyperactivity, truancy, running away from home, or pseudo-maturity[23]. As the child approaches adolescence, acting-out behaviours can include delinquency, drug use, promiscuity, and prostitution.

Social Development

The social development of maltreated children is often affected in critical areas, such as empathy, peer relations, and family resources and support. Peer relations mirror the models of relationships they know best: elements of being both a victim and a victimizer[83]. Behaviours that may have been adaptive with caregivers, such as hyper vigilance and fear, evolve to become highly responsive to threatening or dangerous situations. These strategies, however, conflict with the new challenges of school and peer groups. As a result, children with histories of maltreatment are more distracted by aggressive stimuli and misread the intentions of their peers and teachers as more hostile.

Maltreatment poses major challenges to the child's cognitive, emotional, and behavioural coping strategies, yet many children and adolescents still remain capable of accomplishing major developmental milestones and become well-functioning adults. Circumstantial events, such as the availability of a caring adult, as well as individual factors, such as strong ego control, an easy-going temperament, and social competence, may play a role in mitigating against poor outcomes[30].

Psychological

Child maltreatment disrupts and impairs many significant childhood experiences and developmental processes, resulting in elevated symptoms of internalizing and externalizing problems of adjustment. The results of internalizing problems include depression, emotional distress, and suicidal ideation among children with histories of physical, emotional, and sexual abuse[84]. Emotional trauma resulting from chronic rejection, loss of affection, betrayal, and feelings of shame and helplessness that may accompany chronic maltreatment by one's own family members sets in motion attempts to regulate emotions and behaviour, some of which may become adaptative and others that may not. For example, younger children have a tendency to blame themselves for family problems and parental anger, which furthers a negative self-perception. Perhaps as a result of chronic emotional pain, some teens and adults attempt to cope with unpleasant memories and current stressors by abusing alcohol and drugs, in a futile effort to temporarily reduce or avoid their distress[85]. Substance abuse may also bolster self-esteem and reduce feelings of isolation.

The theme of aggressive behaviour, poor self-control, and impaired social relations continues throughout the development of abused children, which are collectively referred to as externalizing problems. Not only are abused children significantly more aggressive toward peers, they also show other social behaviours indicative of poor self-control, distractability, and negative emotion, such as low enthusiasm and resistance to directions. Consequences of maltreatment have been generally described in terms of increased risk for antisocial personality disorder among men, and increased risk of alcohol-related problems among women[86]. Although many children with maltreatment histories do not become violent offenders, there is a significant connection between such events and an earlier mean age at first offense, higher frequency of offenses, higher proportion of chronic offenders[87], and engaging in sexual and physical violence as a young adult, especially for males[88].

Psychosexual

Sexual abuse can lead to traumatic sexualization, in which children's sexual knowledge and behaviour are shaped in developmentally inappropriate ways. Signs of traumatic sexualization are more likely to occur following situations in which a sexual response was evoked from the child, or he or she was enticed or forced to participate[89]. Children may attempt to sexualize interpersonal relationships by indiscriminately hugging and kissing strange adults and children, something that is relatively uncommon among non-sexually abused children. For others, however, sexual behaviour is associated with strong emotions, such as fear, disgust, shame, and confusion. These feelings may translate into distorted views about the body and sexuality, in some cases leading to weight problems, eating disorders, poor physical health care, and physically self-destructive behaviours noted above[90]. Although sexualized behaviours are more common among younger abused children, they sometimes re-emerge during adolescence in the guise of promiscuity, prostitution, sexual aggression, and victimization of others[91].

Academic

Maltreated children are more likely to show impairments and delays across various measures of cognitive development and academic performance. These problems have been attributed to the limited stimulation received in the home by parents who are overly-concerned with the child's behavioural appearance and obedience, to the detriment of the child's need to explore, attempt new challenges, and to be exposed to a variety of cognitive and social stimuli. Physically abused and neglected children perform at two years below grade level in verbal and math abilities, obtain lower grades, and receive more discipline referrals and suspensions[92]. Unfortunately, they also continue to show significant differences in IQ and reading abilities into adulthood[93]. Children with histories of neglect, in particular, stand out as having the most severe and wide ranging problems in school. They perform worse than other maltreated children on standardized tests of reading, language, and math[94]. Children with histories of sexual abuse are more likely to suffer in their academic performance, their ability to focus on tasks, frequent school absenteeism, and teacher ratings of shyness-anxiousness[95].

Individual Level: Adult Offender

Maltreatment history

Adult offenders' experiences from their families of origin were among the first issues to stand out in early clinical studies of such individuals. Physical and emotional abuse are significant factors in the backgrounds of children who repeat the cycle of violence. Such experiences significantly increase the likelihood that an individual will become subsequently involved in coercive relationships with peers, dating partners, and their own children[96]. The backgrounds of sexual abusers also reveal a link between being abused in childhood and perpetrating against others, although this link is by no means well understood or inevitable[97].

Stress and Arousal

Child abuse researchers have consistently described abusive parents as impulsive and exhibiting a low frustration tolerance. Physiological arousal can increase the propensity for aggression, especially if the person labels the source of such arousal as anger-provoking[98]. Negative arousal interferes with rational problem-solving, such that the person's awareness of the intensity of his or her actions becomes blurred by the urgency of retaliation. This paired association between arousal and child behaviour may occur gradually during everyday parent-child contact or struggles, or more suddenly during highly stressful, difficult encounters.

Psychosexual

Psychosexual adjustment of adult offenders has been described in terms of deficits in relationship formation. This explanation emphasizes negative childhood experiences, including sexual abuse and other forms of maltreatment, that set in motion a cautious, distrustful approach to intimate relationships[99]. An

adolescent male with a history of unhealthy or exploitative relationships, for example, may justify using coercive and abusive actions toward others who are smaller or weaker, because his other attempts have failed[100]. Sexual interests and arousal become fused with his need for emotional closeness, which can lead to sexual preoccupation, promiscuity, and the possibility of increasing sexual deviancy as he escalates his attempts to gain intimacy through sexual contact. Sexual offenders, as a group, are more likely to have significant social and relationship deficits, including social isolation and difficulty forming emotionally close, trusting relationships.

Physical and Psychological Health

A link between certain aspects of adult offender's psychological health and propensity for maltreatment has been shown, related to key personality dimensions associated with various types of maltreatment. Neglectful caregivers typically disengage when under stress, whereas abusive parents become emotionally and behaviourally reactive[101]. Neglectful parents try to cope with the stress of child rearing and related family matters by escape and avoidance, which can lead not only to severe consequences for the child but also higher risk of substance abuse and similar coping failures[102]. Personality dimensions associated with some types of sexual abuse include timid and unassertive interpersonal style, whereas others show a pattern of poor impulse control and domineering interpersonal style[103].

Epidemiological studies support a substantial association between child maltreatment and parental substance abuse. An American national interview study of 1,681 maltreating families found that almost 11% of respondents reported alcohol or drug dependence as a major family stress factor[104]. In a related study, adults with an alcohol or drug disorder were 2.7 times more likely to endorse physically abusive behaviours and 4.2 times more likely to endorse neglect behaviours toward their children[105]. In the Ontario Incidence Study, alcohol abuse was a suspected problem in 13% of the investigations, and drug abuse was a concern in 7% of investigations (with 70% overlap between the two). Substance abuse, overall, is significantly associated with greater recidivism, danger to the child, permanent removal of the child by courts, and noncompliance with treatment[106].

Child Development

Individual Level: Child Victim

Developmental status

The child's role in increasing the risk of maltreatment has received careful scrutiny, especially since maltreating parents often attribute their behaviour to their child's misbehaviour. However, no child characteristic, such as age, gender, temperament, low birth weight, hyperactivity, conduct problems, or disability, has been associated with a greater risk of maltreatment once environmental and adult factors are controlled[8]. Nevertheless, the child's developmental status should form part of the conceptual framework for surveillance purposes, to track the occurrence of prenatal risk factors (such exposure to toxins, alcohol, drugs, or injuries), and child disabilities, such as mental retardation, attention deficit / hyperactivity disorder, and similar developmental and neurobiological conditions. Although children are never responsible for their own maltreatment, specific disabilities or conditions may play a role in the continuation or escalation of maltreatment, and place such children at greater risk of harm.

Developmental Impairments

Child maltreatment is also known to affect a child's attachment status, a critical, ongoing process beginning between six and 12 months of age that normally provides infants with a secure, consistent base from which to explore and learn about their worlds[107]. Longitudinally, abused children who showed early attachment problems are more likely to reveal declining developmental abilities over the first two years of life,

Figure 9
Child Development

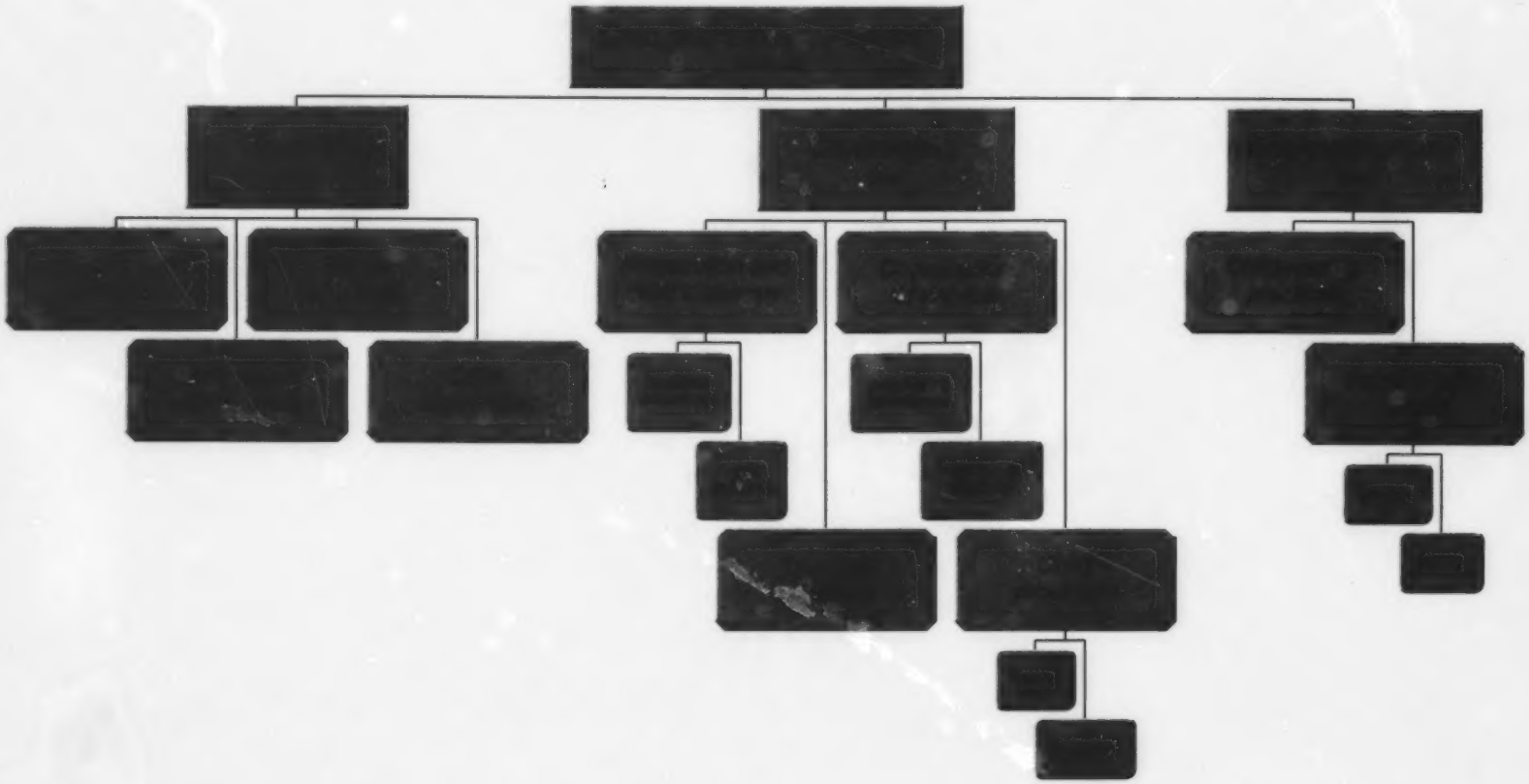
especially in critical areas of speech, language, and social interaction[108].

Parent-child attachment and the home climate also play a critical role in emotional regulation, another early developmental milestone. Emotional regulation refers to the ability to modulate or control the intensity and expression of feelings and impulses, especially intense ones, in an adaptive manner[109]. Emotional and behavioural problems shown by abused children can be explained on the basis of their attempts to regulate strong emotions, such as being overly compliant or remaining negative and resistant. Modulation difficulties may also account for depressive reactions and intense angry outbursts shown among some abused children, adolescents, and adults, as noted previously.

Health and Treatment Status

Longitudinal data on medical care and physical development of maltreated children have not appeared in the literature, despite the obvious implications of such information for the child's overall development. The conceptual framework, therefore, includes surveillance of maltreated children's original injuries, ongoing recovery, and related health data. Part of this surveillance would include medical, dental, and psychological treatment and care existing at the time of the disclosure, as well as during subsequent follow-up by community agents.

Figure 9
Child Development (continued)



Individual Level: Adult Offender

Child-Rearing Style

Child maltreatment seldom involves isolated or premeditated events, but rather occurs in the context of child-rearing. Child-rearing styles play a role in surveillance capacity to the extent that they can form the basis for educating parents about appropriate and inappropriate child rearing approaches. For example, studies of the everyday interactions between abusive parents and their children find that such parents express significantly less positive behaviour during interactions with their children and other family members[28]. Relative to other families, members of child-abusive families interact less often; when they do interact it tends to be more negative, and to involve excessive forms of verbal and physical control that exceed the demands of the situation.

Child-Rearing Expectations

Studies indicate that maltreating parents are largely unfamiliar with their role as parents, including atypical knowledge and beliefs about normal child development and behaviour[110]. Deficits and distortions may both play a role in parental perceptions and judgments of their child's behaviour, perceptions that justify coercive or neglectful behaviour. They interpret the child's behaviour as wrong and respond rapidly, without contemplating the circumstances or considering innocent explanations, which incites explosive, abusive reactions[111]. Unrealistic expectations and negative intent attributions can lead to greater punishment for child misbehaviour and less reliance on explanation and positive teaching methods[112]. Children are seen as deserving of harsh punishment, and its use is rationalized as a way to maintain control. Thus, maltreating parents may bring into interactions with their children a variety of negative beliefs and expectations about their children as well as about themselves as parents.

Family Level

Conflict and Violence

Researchers estimate that in 30% to 60% of families where either child maltreatment or woman battering is occurring, the other form of violence is also occurring[113]. Straus and Gelles found that men who reported beating their wives were also more likely to report abusing their children (i.e., 50% of fathers who abused their wives three or more times in the last year also abused their children three or more times during the same period)[114]. The Ontario Incidence Study reported that inter-parental violence was suspected in 17% of investigations. Studies of marital conflict show that the escalation of emotional arousal and aggression accompanying adult conflict can carry-over to interactions with the child, and that marital conflict and violence most often arise during disagreements over child rearing, discipline, and each partner's responsibilities in childcare[115].

Child Rearing Effectiveness

Family circumstances such as conflict, violence, and stress can produce an escalating cycle of turmoil and violence, whereby children's behaviour creates additional stress on the marital relationship and further aggravates an already volatile situation. Marital violence and family turmoil not only frighten and disturb children directly; the resulting fallout from such events, ranging from changes in financial status and living quarters to loss of family unity and safety, prolongs the stress and harmful impact on children's development[116].

Child Supervision

Certain situational factors increase children's vulnerability to maltreatment. Child sexual offenders, for example, see children as more vulnerable if they have family problems, spend a lot of time alone, and seem unsure of themselves; they also admit to preferring victims who are attractive, trusting and young[117]. To gain access to the child they look for circumstances that create lax supervision or opportunities for them to

become involved, such as parental unavailability, illness, stress, spousal abuse, or lack of emotional closeness to the child (all components of the conceptual framework). Low income and social isolation also increase a child's risk of maltreatment, because parents may lack resources or opportunities for suitable child care and safety precautions[30]. Surveillance of these factors may lead to prevention strategies that rely more on improving adult supervision and reducing children's exposure to possible risk situations.

Family Planning

Maltreating parents are more likely to have a large number of closely spaced children and a larger family size[8], issues that warrant ongoing surveillance for future community prevention and education. Such data may include whether the child was planned, the effect of the pregnancy on parental attitudes and lifestyle, financial support of the biological father, and the parents' preparedness and competence in child rearing.

Community Level

This section outlines several important community responses, ranging from prosecuting and tracking offenders to providing early intervention and prevention services for high-risk families.

Prosecution and Child Testimony

Systematic data on the prosecution of child maltreatment offenders is an important component to the model. Cases of physical and sexual abuse may go unprosecuted out of concerns about the effects of prosecution on the mental health of the child, and concerns that the child will not be able to provide credible evidence. Only 3-4% of sexually abused children known to official agencies ever testify in criminal trials[118]. Nonetheless, approximately 50% of cases referred for prosecution require that the children testify at some legal proceeding such as a preliminary hearing[119]. Thus, surveillance must include modifications to courtroom procedures to accommodate child witnesses, such as the use of video testimony, one-way screens to shield the child from the accused, admission of hearsay evidence on behalf of a child victim, and the use of educational services for children to prepare them for courtroom testimony. Expert testimony on issues related to the psychological symptoms of abused children (such as recantation, delayed disclosure, the need for the screen or closed-circuit presentation, suggestibility and memory in children), is also an important consideration affecting law enforcement and prosecution of maltreatment[120]. These important reforms need to be monitored to determine their effectiveness and overall impact.

Coordination of Service

Consistent and coordinated community efforts assist in child maltreatment prevention and intervention, such as coordinating committees to assist investigation, services, and training of personnel involved in child maltreatment. Public health programs, such as home visits by trained nursing or social work professionals, are another promising community-based approach to coordinating social and health-related services to families.

Tracking Offenders

Sexual abuse offenders warrant careful community tracking, since they may re-surface in other communities in positions of trust. Such offenders may provide services and activities of interest and value to children and families, which allows them access and camouflage for their behaviour. Tracking offenders requires coordination at the federal and provincial level in addition to community efforts, since it is often discovered that they were known or suspected to have abused children in other locations prior to the current investigation. Greater exchange of relevant information between communities and agencies is an issue for future surveillance planning.

Child Protection

Although child protection services are available in every province or territory and community, there is

considerable variability in terms of their community role and effectiveness. Part of the surveillance capacity should include data as to child welfare resources, such as the number of foster homes and specialized placement facilities, average number of cases per social worker, percentage of the total budget that is earmarked for prevention and community outreach, and similar issues. A second aspect to child protection involves the availability and extent of training for child welfare workers, given the critical and far-reaching role they play in each community.

Societal/Cultural Level

Societal/cultural factors play a major — albeit diverse and indirect — role in the incidence and prevalence of child maltreatment. The conceptual framework recognizes the importance of social policy in changing the acceptance of factors that may indirectly encourage child maltreatment, such as the acceptance of corporal punishment, as well as cultural factors that may be under-developed in terms of their potential role in supporting healthy families. Two prominent areas relating to child maltreatment surveillance capacity include child-rearing practices and public health policies.

Child-Rearing Practices

Child-rearing practices have been changing dramatically over the past 50 years or so. Yet, many parents spank their children, even though they question its effectiveness[121]. Cultural norms vary by geographical region, such that corporal punishment may be much more accepted as a primary, even necessary, component of discipline in one locale and not another. Studies are suggesting, however, that even the amount of "routine violence," such as being hit with objects or physically punished, that one experiences as a child is significantly associated with violent delinquent behaviour later on[122].

The use of corporal punishment remains controversial, and warrants surveillance since it leaves it up to local standards and parental judgment to define what is "reasonable" punishment in the absence of a universal standard. Child maltreatment may be further influenced at a broad cultural level due to limited opportunities to learn about appropriate child rearing and receive necessary education and supports, as well as long-held social customs that endorse the use of physical force to resolve child conflicts.

Public Health Policies

From a public health perspective, the incidence of child maltreatment may be reduced through primary prevention efforts, which are targeted to large segments of the population regardless of any signs or symptoms of concern. Identification of the most important groups to reach is guided by epidemiological studies that point to particular characteristics of the population who have the problem, such as persons living in disadvantaged neighbourhoods. Primary prevention is population-based, rather than individually-based, so its successful application is reflected by reductions in the rate of the disorder in the selected population, such as a particular community or county.

ANALYSIS

This section considers how the framework can inform and guide priorities for future surveillance efforts. A major objective of a planned epidemiological strategy is to aid a public health approach to the prevention of child maltreatment. Such a strategy should not undermine existing efforts at treatment and early intervention; rather, it would be designed to approach the widespread problem of child maltreatment from a broader, more fundamental vantage point.

To recap, the major purpose of the conceptual framework is to identify the range and detail of information that forms the capacity for surveillance of child maltreatment. Because rates of child maltreatment are affected by many different levels of action, a very comprehensive and broad-based surveillance strategy that includes multiple sources of information is required. The conceptual framework is ecological in scope, to account for the interacting, multi-level nature of child maltreatment. Attention is directed at societal influences that play a role, especially in circumstances where families are exposed to major effects of poverty, health risks, and environmental stressors.

A major strength of the framework lies in its comprehensive approach to all forms of maltreatment, tying together the common theoretical and empirical elements and highlighting important and unique features. Theory and findings are considered from the viewpoint of four primary levels of analysis: individual characteristics of child victims and adult offenders, family characteristics, community factors, and societal and cultural influences.

The conceptual framework is limited by a lack of Canadian studies on the epidemiology and consequences of child maltreatment. The majority of the findings reported herein are based on American studies, with some contribution from the United Kingdom and Australia. Due to the heavy reliance on the U.S. literature, some of these findings may not always be applicable to Canada.

The framework is also challenged by the lack of knowledge in some areas that are theoretically important, primarily due to under-developed theory and research in child maltreatment in general. The economic consequences of child maltreatment is one example. Despite calls for information on the short- and long-term economic impact of various forms of maltreatment, few data exist that can provide reasonable estimates of such costs. A further drawback in this regard is the general lack of information pertaining to the influence of cultural and societal factors in the etiology or response to maltreatment. Current theoretical perspectives emphasize the importance of macro-level factors in terms of their indirect influence on child rearing and maltreatment, but few attempts have been made to collect and analyse such findings (with the notable exception of studies discussed herein on the role of neighbourhood structure on rates of child maltreatment). These factors will become better understood as a result of increased and expanded surveillance efforts.

Development of a National Capacity for Child Maltreatment Surveillance

The conceptual framework for child maltreatment surveillance is intended to serve as a guide for identifying both existing and future sources of information. Incidence and prevalence ideally would be determined by population-based surveys involving a random sample of the general population to determine patterns of maltreatment. This method is limited, however, by the lack of clear-cut definitions and reliance on self-report. Thus, surveillance methods are intended to monitor not only known incidents of child maltreatment, but also to monitor key factors that contribute to its causes and outcomes. Under-reporting of child maltreatment

can be estimated on the basis of key information, such as unexplained injuries, that may not have resulted in a formal report to child welfare.

A plan for action is described below in relation to priorities and partnerships for developing a surveillance capacity.

Priorities, Partners, and Resources

The application of the conceptual framework to the development of a surveillance capacity begins with establishing priorities and setting goals. Recommended priorities and partnerships are described in Table 1. These priorities were based on the principle of drawing upon existing and expanded population-based systems to collect and analyse data relating to the broadest determinants of health, followed by more specific and detailed surveillance efforts.

The initial step involves reviewing existing federal and provincial data systems to determine their fit with the key variables of the framework, and expanding these systems to include information identified in the framework as necessary. For example, data from existing sources, such as census reports, child and youth surveys, and Statistics Canada, may be applicable to the surveillance of key factors such as family structure, alternative care, and conditions in the home. Key population-based information that is currently not being collected by other potential partners could then be sought through targeted proposals to research institutions, such as information on children's disclosure of maltreatment (see Table 1).

The secondary and tertiary priorities require more expansive partnerships and detailed studies in many cases. Table 1 describes illustrative collaborative efforts involving both government efforts and information from specific sectors, such as police, hospitals, and practitioners. For example, poverty and social assistance (key variables contained within Income and Social Status) can be monitored at the federal level through population-based statistics and surveys, but more detailed and specific information could be attained with the addition of provincial/territorial data on social welfare costs, dental and medical care for lowest-income households with children, and costs and services related to prenatal care. These recommended priorities and partnerships are intended to be illustrative and not exhaustive; consultation with potential partners would serve to further refine and clarify the type of data currently available and methods for obtaining additional information.

Examples of Partnerships and Collaborative Efforts

The conceptual framework was developed in consultation with governmental and non-governmental agencies responsible for child maltreatment surveillance, prevention, education, and policy in various countries. Many of these organizations (such as the American Humane Association; the Kempe Children's Center; the World Health Organization, the Pan American Health Organization, and the U.S. Centers for Disease Control and Prevention) have expressed interest in the framework, and see it as highly relevant to their planning and initiation of future surveillance and prevention efforts.

One of the most significant partners in the formation and future implementation of the framework has been the World Health Organization (WHO). WHO has placed a high priority on the identification of various types of violence worldwide, including estimates of the magnitude of different forms of violence as well as public health consequences. It is seeking to establish operational definitions for different types of maltreatment in particular, and to develop data systems and methodology that will serve to quantify the impact of maltreatment and other forms of violence on mortality, morbidity and quality of life of the population in different countries.

Table 1
Priorities for Key Variables in the Conceptual Framework, with Examples of Partnerships

	Priority 1: Population-based	**Priority 2: Sector-based**	**Priority 3: Advanced**
INCOME AND SOCIAL STATUS			
Poverty / social assistance	Federal: Statistics Canada poverty and income figures; welfare payments by province	Provincial: social welfare figures; dental and medical care; prenatal care and services; ratio of aid workers: population	Regional: watchdog groups; research: cross-sectional studies correlating welfare and maltreatment rates
Family and neighbourhood structure	Federal: census data	Municipal: housing data; police crime reports	
Employment	Federal: employment figures by sector, region	Provincial: targeted job training initiatives	
Economic and medical costs	Research institutions: follow-up studies of victims	Provincial: hospital costs for known maltreatment	
Discrimination / inequality	Population-based surveys of public opinion and experiences	Provincial: police occurrences of domestic violence and child abuse; Statistics Canada, Uniform Crime Reporting Survey	
SOCIAL SUPPORT			
Social isolation / support	Research institutions: cross-sectional studies of perceived support	Municipal: children's mental health and family counseling centres	
Disclosure	Research institutions: cross-sectional studies on children's disclosure	Provincial Child Protection Services: tracking of sources of children's disclosure of maltreatment; Hospitals: assessment protocols	Municipal: school policies and training
Access to resources	Federal: surveys of access & barriers; transportation data	Child and parent resource centers; outreach services; cultural interpreters	
Alternative care	Research institutions: child and youth surveys	Provincial: Child Protective Services data; foster parent training	Municipal and provincial: Foster Parent Association
Children's moves and disruptions	Federal: National Longitudinal Survey of Children and Youth	Provincial: school records.	Research institutions: cross-sectional studies
Child custody and access		Provincial: Family Court proceedings involving allegations of abuse; Legal Aid applications	Municipal: supervised access centers

Table 1
Priorities for Key Variables in the Conceptual Framework, with Examples of Partnerships (continued)

	Priority 1: Population-based	**Priority 2: Sector-based**	**Priority 3: Advanced**
EDUCATION			
Preparation for parenthood	Federal: early intervention efforts; surveys	Provincial: schools, teen parent inclusion programs; public health records	
Formal education	Federal/provincial: literacy data; school drop-out	Provincial (education ministry): family study requirements	
School- and community-based efforts	Federal: response protocols for multiple disclosures	Provincial/municipal: school boards: optional or mandatory training; protocols; policies for prevention and awareness; funding levels	Municipal: schools: student-initiated activities; child abuse councils: fundraising; efforts to coordinate services
Professional training	Federal: surveys of standards for professional training	Provincial: professional organizations; university courses	
Media	Federal: Canadian Radio and Television Corporation; watchdog groups on media violence	Provincial: advertising efforts; awareness weeks	
Research	Federal/provincial: research council funding; type of awards; research centers	General: publications from Canadian research institutions on child maltreatment	
Judicial/legislative actions	Federal: Attorney General: training for judges/prosecutors; sentencing; Solicitor General: police protocols and training	Provincial: sanctions for convictions; police data on pornography and child prostitution	
Sexism	Federal: Surveys; Statistics Canada data		
PHYSICAL ENVIRONMENT			
Homelessness	Federal: Ministry for the homeless; Canadian Mortgage and Housing Corporation	Provincial/municipal: emergency shelter data	
Conditions in the home	Federal: Statistics Canada injury data; researchers: child and youth surveys; Canadian Hospitals Injury Reporting and Prevention Program	Provincial: hospital reports; public health records; Child Protective Services reports; native affairs ministry; band councils;	Municipal: fire dept.
Neighbourhood structure	Federal: Statistics Canada: population patterns/shifts	Provincial: daycare spaces, regulation	Municipal: housing vacancy rates; playground safety and standards
Neighbourhood safety	Federal: Crime reports; Statistics Canada, Uniform Crime Reporting Survey	Provincial/municipal hospital records; Canadian Hospitals Injury Reporting and Prevention Program	neighbourhood watch records; Block Parent data

Table 1
Priorities for Key Variables in the Conceptual Framework, with Examples of Partnerships (continued)

	Priority 1: Population-based	Priority 2: Sector-based	Priority 3: Advanced
PERSONAL ADJUSTMENT AND COPING RESOURCES			
Child factors	Federal: National Longitudinal Survey of Children and Youth; National Population Health Survey; Research institutions/councils: representative surveys/studies could be commissioned	Provincial: Child Protective Services data; school records; hospital records; native communities; Canadian Hospitals Injury Reporting and Prevention Program	Research institutions: cross-sectional studies; children's mental health centres;
Adult factors	Federal: research institutions/ councils: representative surveys/ studies	Provincial: Ministry of Correction records	Research institutions. cross-sectional studies; practitioners: medical and psychological data; court-related clinical services
CHILD DEVELOPMENT			
Child factors	Research institutions: representative surveys/studies; Canadian Hospitals Injury Reporting and Prevention Program; Chief Coroners and Chief Medical Examiners' records	Provincial: Child Protective Services records; hospital records (injury/health)	Practitioners: medical and psychological data;
Adult factors	Research institutions: representative surveys/studies (e.g., corporal punishment); National Population Health Survey	Provincial: Child Protective Services records; hospital records (injury/health); police reports	Practitioners: medical and psychological data;
Family factors	Research institutions: representative surveys/studies	Provincial: police reports; Child Protective Services records (training/resources)	Research institutions: cross-sectional studies;
Community factors	Federal: Attorney General data on courtroom procedures for children;	Provincial/municipal: victim-witness programs; Solicitor General and Corrections (tracking offenders)	Municipal: child abuse councils (coordination efforts)
Social-cultural	Federal: Research institutions: representative surveys/studies (childrearing)	Provincial: public health initiatives	

The purpose and intent of the conceptual framework for child maltreatment surveillance is a good match with the stated priorities and actions of WHO. Specifically in relation to child maltreatment, WHO is seeking to:

- survey current data collection systems in various countries that are being used to obtain, analyze and use information about child maltreatment and similar forms of violence;
- develop accurate, affordable and valid measures for collecting information about non-fatal violence and its costs and consequences;
- develop a typology and definitions of different types of violence, related risk behaviour and consequences;
- facilitate the development and adaptation of research methodology to describe and measure violence better in its different forms, with its determinants and physical, psychological and social consequences;
- promote and provide technical support for the compilation of local and national analyses of data on different types of violence, and for international comparisons (the analyses must be informed by a gender and equity perspective);
- carry out district- or community-based surveys of violence in order to determine the nature and extent of interpersonal violence, especially in relation to women, children and adolescents; and
- ensure that the information collected is disseminated and used appropriately.

A further example of partnership and collaboration is Health Canada's *Child Abuse: Reporting and Classification in Health Care Settings*[9], which supports research identifying how child abuse is classified and reported in selected pediatric hospitals. This project surveyed selected hospitals to determine their decision-making rules concerning the identification and reporting of child maltreatment, and reviewing current legislation and case law on duty-to-report. The findings from this project have direct implications for the conceptual framework, especially in terms of improving surveillance of maltreatment in hospital settings. In addition, the project helps to identify training requirements of professionals in hospital settings, clarify issues regarding confidentiality, under-reporting, and liabilities for non-reporting and reporting biases, and advance understanding of definitions of child maltreatment.

A related epidemiological effort that could inform efforts to develop a national surveillance capacity is provided by an international collaboration, named WorldSAFE (World Studies of Abuse in Family Environments)[123]. WorldSAFE was developed by a group of physicians and social scientists working within the International Clinical Epidemiology Network (INCLEN). They developed a protocol for parallel studies of domestic violence and child abuse in their countries, in response to widespread lack of recognition of the problems of child maltreatment and domestic violence in many parts of the world. Since 1992 they have developed and refined a core instrument designed to survey population-based samples of mothers (aged 15-49) about their experiences with domestic violence and harsh forms of punishment that might be considered abusive. The instrument also asks about risk and protective factors related to family violence, such as alcohol use, their own childhood experiences of violence, isolation vs. social connectedness, and utilization of social supports and services. The experiences and methods of this international effort are relevant to developing future partnerships.

Things to Consider

Special needs populations. There is an information gap in relation to special needs populations, such as Aboriginal communities, abuse of children in institutions and in alternative care settings, recent immigrants, and the disabled, which may be improved through the development of a national surveillance capacity for child maltreatment. These populations may not be adequately represented in current data systems, due to language barriers and limited means of contact via standard survey methods.

An approach for improving this state of affairs involves the development of specialized data protocols to survey determinants of health factors among these populations more directly. The interview protocol would be developed with the input and guidance of persons comprising these special needs populations, to clarify cultural differences in defining terms and behaviours related to the determinants of health and child maltreatment. Interviewers could be used to conduct face-to-face interviews in randomly selected communities that are under-represented in other data systems. Interviews would be conducted with key personnel from various sectors (such as police, hospital administration, and public health), as well as children, youth, and family members living in identified communities.

Sources of data. An additional consideration relates to the identification of sources of data pertaining to key aspects of the framework. Choi describes several existing data sources in Canada[124], which may be of benefit to child maltreatment surveillance. These include national population-based databases such as hospital statistics and the National Population Health Surveys (including the National Longitudinal Survey of Children and Youth). Canada also has national voluntary databases for medical and non-medical concerns that have potential for providing specific information relevant to abuse and neglect (such as victim services, watchdog groups, and so forth). However, to be of maximum benefit to the various aspects of the framework, methods need to be developed to link records from existing databases and create new and more useful databases. Some information in the conceptual framework is not captured routinely, whereas other data are available at the population-based level. A first step, therefore, is to catalogue available data sources that are pertinent to the framework, and identify major and minor gaps. Table 1 provides some direction in this regard.

Refining the Framework. Surveillance efforts help to document and understand the causes and effects of specific disorders or phenomena, such as child maltreatment. This crucial information then serves to establish effective ways to reduce and prevent such events. Simply stated, a prerequisite for the prevention of child maltreatment involves practical ways to define the nature and scope of the problem, analyze its common factors, and understand how they interact. The conceptual framework offers a beginning to this important integrative step, and its value and shortcomings will develop further as it is applied. Suggestions for next steps needed to set up a comprehensive and long-term surveillance system include several key activities[125]:

- Roundtable discussions may be held to identify key stakeholders and to assist in prioritizing the purpose and methods for the surveillance system.
- The set of indicators noted herein may be further refined by conducting consensus workshops with experts from various disciplines to develop ground rules and working definitions for determinants of health that are chosen for the focus of study.
- Existing databases should be reviewed to determine availability of the prioritized indicators and how to access such databases.
- Similarly, the quality of existing databases can also be evaluated and improved. Gaps in availability of key information can be identified, along with methods for developing and collecting additional information relevant to surveillance.

Potential Benefits of the Framework. In addition to surveillance, information gathered with respect to the conceptual framework can be of benefit to national and provincial efforts to reduce child maltreatment. More detailed and relevant information can serve to increase both public and professional awareness of the problem of child maltreatment. Efforts to develop more targeted intervention and prevention programs could also benefit from population-based findings that indicate the relationship between child maltreatment and specific determinants of health, such as underemployment, limited housing, and so forth. Finally, findings based on the key determinants of health as

identified in the conceptual framework will promote scientifically sound research to inform policy development and similar advances on a national level.

Implications of Child Maltreatment Surveillance

Public Policy and Public Health

Public policy and public health initiatives can assist in the prevention or reduction of child maltreatment in a number of ways at the federal, provincial/territorial, or local level. For example, governments can establish registers and similar reporting formats to reduce the chances that individuals who are at-risk of perpetrating violence (either because of their own past records or because of related risk factors) do not reoffend, such as requiring the release of relevant information to protect the public from sexually violent offenders. Although this type of regulation does not directly focus on the perpetrator's behaviour, it has direct consequences. Governments also can impose stiffer criminal sanctions on those who violate the laws meant to protect the public, as well as fund community prevention efforts and services and their evaluation.

Governments can educate the public, disseminate information, and provide technical assistance to communities trying to prevent child maltreatment. Individual provinces and territories, furthermore, can enhance and further define mandates on professional groups related to training and reporting. Policies can involve training in domestic violence, child abuse, and conflict resolution for all police, medical and nursing students, teachers, and others in the helping professions who are required to report suspicions of child abuse.

Child protection systems can work to maximize the safety of children for whom child maltreatment is documented each year, and work to keep these children in the environments that are most supportive of healthy growth and development. Some communities in the U.S. are moving toward neighbourhood-based child protection service systems that build community ownership of the problem and connect formal and informal supports and services, so that child protection is no longer seen as a task only for the government[125].

Governments can intervene to alter conditions that lead to maltreatment through providing prevention and early intervention services and supports for families, and by reforming the way that services are organized and delivered, particularly in poorer communities. Examples of enhanced services include increased prenatal care, early childhood education, family resource centres, and mental health and drug treatment. Service systems can be reformed so that they are comprehensive, concerned with prevention, and neighbourhood based. Changing the design and control of public housing is another approach that might alter the rate of child maltreatment in a community.

Finally, governments can affect broader quality-of-life issues at the cultural level, largely through economic interventions. Throughout the discussion of factors contributing to the conceptual framework was the underlying theme of inequality and social disadvantage in relation to the incidence of child maltreatment, a finding that has been supported throughout three decades of research. Efforts to reduce the incidence and prevalence of child maltreatment, therefore, must involve the development of social welfare policies that address these influences in a consistent and meaningful way.

Prevention

The feasibility of public health strategies intended to prevent or reduce child maltreatment are becoming more recognized, and the conceptual framework has important implications for such efforts. Prevention strategies relevant to child maltreatment surveillance include universal and selected interventions that may be ongoing in certain locations across the country. Universal interventions are generally positive, carry low risk, and are tailored to conform to sub-cultural norms and expectations. Selective interventions are

more appropriate for members of particular subgroups who have been shown, through epidemiological studies, to have a heightened risk of developing psychological problems, such as children from disadvantaged families or neighbourhoods.

For children and youth who have experienced forms of maltreatment, primary and secondary prevention efforts are most attractive for preventing harmful outcomes as well as future violence in relationships. Intervention at an earlier stage in the process of relationship formation may restore normal developmental processes, such as empathy and self-control, and minimize the risk of further harm caused by exposure to abusive adult models. The pathway from experiencing violence in childhood to becoming violent or abused in subsequent relationships — while significant — is by no means direct, inevitable, or irreversible. Many circumstantial events, such as the availability of a caring adult, as well as individual strengths such as an easy-going temperament and social competence, may play a role in mitigating against such outcomes.

Universal and selected prevention programs are often targeted at the broader community or societal level, in an effort to influence large numbers of people and the most significant causes and effects of child maltreatment. Universal prevention programs would be one of the most significant prevention outcomes of future surveillance activities. Examples of such strategies are competency enhancement (such as parent education programs), public awareness and information services, and interventions that target vulnerable populations during periods of transition and stress (such as parent-aide and family support programs). There has been a slow but gradual growth in efforts to develop and expand such programs over the last decade, and their potential importance justify their inclusion in the conceptual framework.

A family support strategy is one particular example of a universal prevention strategy, which provides a blend of services in a family-centred format. Primary services (e.g., education on infant care and stimulation) can be provided to all parents, without identifying particular groups. A major advantage of this approach lies in the emphasis on providing services to families before child maltreatment is detected and labelled, which at the same time provides a more positive and successful entry into the child welfare and health-care systems.

Rather than relying on aversive contingencies, a prevention strategy works on the principle of providing the least intrusive, earliest assistance possible. The focus can be shifted away from identifying misdeeds of the parent, and more toward promoting an optimal balance between the needs of the child, the abilities of the parent, and the extent and type of stress experienced by family members. Such a model, however, requires a different allocation of resources and professional commitment than is presently in place.

Considerable promise exists in expanding home visitation programs developed in the field of public health to address the promotion of safety and security for infants and young children on a universal basis[126]. There is also a growing recognition that such programs need to be neighbourhood-focussed. Many children are not only at risk of abuse and neglect in their homes but also in their neighbourhoods and schools, which requires extensive collaboration among service systems. Thus, initial efforts may have to target high risk neighbourhoods and communities rather than assessing one client (potential victim) at a time.

Another promising direction is to expand primary prevention programs to schools, as a partnership amongst students, teachers, parents, and community agencies with knowledge and expertise about child maltreatment. For adolescents, the programs need to be relevant to their interests, such as dating violence, and actively involve counselling, such as peer support and peer models. Moreover, public education campaigns need to tailor awareness efforts to recognize different perspectives and needs related to demographics, such as gender, race, and social class. Communities

need to move beyond awareness and offer very specific and practical strategies on what the average citizen can do about child abuse and neglect. These strategies have to be specific enough to help a friend or co-worker deal with a perpetrator or victim that they know, in a manner that ensures their own safety. As well, broader messages are needed to inform people as to what they can do for the child maltreatment issue in their own communities[127].

In conclusion, child maltreatment surveillance and prevention efforts are at the formative stages in North America. Whether real progress is made will depend on public and governmental commitment to make prevention a long-term priority, similar to campaigns to prevent injuries through seat-belt use, to encourage environmental protection, to reduce drinking and driving, and to reduce smoking and related health risks. While it is encouraging to witness the rising number of innovative programs around the world that are attempting to prevent maltreatment or to reduce its consequences, shortcomings exist due to the early development of the field, lack of resources, and research limitations. The challenge remains, therefore, to move beyond the fledgling local programs scattered across various communities, to ensuring comprehensive evaluations and research to support the effectiveness of current and future efforts. A clear commitment will be needed from all levels of government to address these issues on a comprehensive scale, with the goal of establishing a consistent, coordinated, and integrated approach for each community.

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2

Epidemiological Framework for

Child Maltreatment Surveillance

Lilian Yuan, MD, MSc

INTRODUCTION

Child maltreatment is a significant issue in public health with serious implications for physical and psychological health as well as development in childhood and beyond[1] . Despite the importance of child maltreatment, accurate estimates of its extent in the general population are very difficult to obtain. Much secrecy surrounds cases because of shame, social stigma and the criminal liability for its occurrence. However, ongoing statistics about child maltreatment are essential for the design of prevention and intervention strategies.

In Canada, estimates of the prevalence and incidence of the condition have been obtained from population-based studies such as the Ontario Health Supplement (OHSUP) and the Ontario Incidence Study (OIS). In the 1990 OHSUP, involving a random sample of 9,953 Ontario residents aged 15 years and older, 31.2% of males and 21.1% of females reported a history of childhood physical abuse, and 4.3% of males and 12.8% of females reported a history of childhood sexual abuse. Among individuals with co-existence of physical and sexual abuse, females significantly outnumbered males[2]. In the 1993 OIS, a sample of 2,447 child welfare reports (27% were substantiated) found incidence rates of physical, sexual and emotional abuse of 1.93 per 1,000, 1.57 per 1,000 and 0.44 per 1,000 respectively; the incidence of neglect was 2.02 per 1,000[3].

Interest in the collection of data about child abuse and neglect has been expressed by the Pan American Health Organization (PAHO)[4], and the World Health Organization[5]. In 1996, Health Canada formed the Child Maltreatment Section in order to contribute to a better understanding of the extent and dynamics of child maltreatment nationally. The Section has examined child abuse data collection in Canada in projects such as *Child Abuse Reporting and Classification in Health Care Settings*[6] and *Child Death Review and Child Mortality Data Collection in Canada*[7]. The Section is supporting child-welfare based surveillance of child maltreatment[8] and is engaged in the development of a child mortality database. Beyond these activities, it is interested in developing a national surveillance system on child maltreatment.

The purpose of this chapter is to further discussion about this endeavour by reviewing the following:

- principles of public health surveillance with application to child maltreatment surveillance;
- issues specific to child maltreatment data, such as variability in abuse definitions, different levels of child abuse identification, etc.;
- functional and operational issues of child maltreatment surveillance;
- potential sources of child maltreatment data for use in surveillance; and
- potential ways to conduct surveillance of risk factors and behavioural indicators.

Although child maltreatment has been treated principally as a social issue, most surveillance systems have been set up to monitor medical conditions. To date, most work conducted on surveillance has been published in the epidemiological and medical literature. Therefore, discussions and examples in this document may at times appear overly disease-oriented to some readers.

BACKGROUND: PUBLIC HEALTH SURVEILLANCE

Surveillance involves the ongoing and systematic *collection*, *analysis*, *interpretation* and *dissemination* of health data for the purpose of planning, implementing and evaluating public health interventions and programs[9]. It differs from research, investigation, priority-setting, policy development, issue management, or risk management, even though it provides information essential to these activities[10].

The science of surveillance was first applied to infectious diseases in the mid-1800s but has since been applied to a wide variety of conditions, such as chronic diseases, injuries, and environmental hazards[11]. Surveillance data can be collected for a variety of purposes[11,12]:

- to describe the occurrence of a condition by person, place and time;
- to identify factors that render a health event more likely;
- to establish priorities for allocating health resources to manage a problem;
- to assist in the development of preventive measures;
- to evaluate the effectiveness of preventive efforts;
- to forecast the future pattern of a condition; and
- to indicate areas for further research.

For routine surveillance, the choice of data source(s) depends on the condition of interest, how its presence is detected, the goals of surveillance, and the resources available[11]. Surveillance data can be collected passively and/or actively. Passive surveillance occurs when individuals in the field initiate reporting. An example is the notification of legally reportable infectious diseases to the local public health department by physicians and laboratories. Although passive systems are usually less costly to operate than active systems, the diligence of reporting depends on the motivation of the reporter. Even when the obligation to report is made mandatory by legislation, busy practitioners do not report all cases. To encourage reporting, there must be a relatively easy mechanism in place. It is also important to request only data that meet the objectives of the surveillance system. If superfluous data are requested and collected but not used, the reporter will question the surveillance effort, and support for the program will decline.

In contrast, active surveillance occurs when regular contact is made with potential sources to inquire about the occurrence of a condition. This method is often expensive but necessary when a condition is not legislatively reportable, no data are available, no passive surveillance system is in place, or the information is needed urgently. If active surveillance is added to an existing passive system, the frequency of reporting may greatly increase and suggest that the occurrence of the condition has escalated when, in fact, it has not. Therefore, changes in data-gathering methods need to be clearly stated when trends in surveillance data are presented.

The ideal situation involves population-based data gathering, but this may not be possible in all instances, or the information required is so complex that it would be impossible to collect on a population basis. Alternative methods, such as sentinel reporting, are often used in these circumstances. Sentinel reporting involves the selection of sites in the community to report either passively or actively. The sites are sometimes selected randomly and other times not, depending on the condition, the size of the community, and the amount of information desired. In the latter case, practitioners who are more likely to see a condition may be selected as sentinels. For example, the Expanded Programme on Immunization (EPI) of the World Health Organization (WHO) has encouraged many countries to adopt sentinel systems to obtain data from larger hospitals in a community[13]. Such sentinel systems may give biased information, depending on how representa-

tive the sites are of the general community. Nevertheless, such data are still useful for evaluating trends and estimating the impact of special programs[14].

When surveillance systems are being designed, ways to motivate cooperation with data collection need to be considered — for example, offering epidemiological assistance to reporting sources; making the reporter aware that data are compiled and used to develop more effective prevention programs; or acknowledging reporters in surveillance reports.

CHARACTERISTICS OF SURVEILLANCE SYSTEMS

With regard to the quality of a surveillance system, several attributes need to be borne in mind during its design, and periodically evaluated after its setup[15].

a) Usefulness

A surveillance system is useful if it improves knowledge and/or influences programs and policies in response to the problem. Cumulative data may provide quantitative estimates of the magnitude of the morbidity and mortality of a condition and identify factors involved in its occurrence.

b) Simplicity

The simplicity of a surveillance system refers to both its ease of operation and the structure of information flow. Simplicity will affect the timeliness of surveillance and the amount of resources required to operate the system. Factors that affect simplicity include the types of information needed to establish a case, the number of reporting sources, the methods of transmitting information, the number of organizations involved in transmitting case reports, the complexity of data analyses, the number and type of users to whom reports are disseminated, and the methods of dissemination.

c) Flexibility

A flexible system can adapt to changing information needs or operating conditions with little additional cost in time, personnel or funds. Flexible systems can accommodate new conditions, changes in case definitions, changes in the amount and type of information collected, and variations in reporting sources.

d) Acceptability

This attribute refers to the acceptance of the system to persons outside the sponsoring agency, such as those who are being asked to report. Acceptability is a largely subjective attribute that encompasses the willingness of persons on whom the system depends to provide accurate, consistent, complete and timely data. Some factors that have been found to influence acceptance of a particular system include:

- the public health importance of the condition;
- recognition by the system of the individual's contribution;
- responsiveness of the system to suggestions or comments;
- time burden of the system; and
- legislated requirements for reporting.

e) Sensitivity

Sensitivity is the proportion of cases in a community that are detected by the surveillance system. It is affected by the likelihood that persons with the condition will come forward, that cases will be correctly identified, and that identified cases will be reported to the system. A surveillance system that does not have high sensitivity can still be useful in monitoring trends, as long as the sensitivity remains reasonably constant. Changes in sensitivity can be precipitated by factors

such as heightened awareness of the condition, the introduction of new methods to identify cases, and changes in how surveillance is conducted.

f) Specificity

Specificity is a measure of the frequency of falsely identified cases. When a significant number of erroneous reports are included as cases, confidence in surveillance data is eroded and resources are wasted in responding to a non-existent problem. Thorough case investigations as well as clear and specific case definitions and good communication between reporters and receiving agencies can reduce the frequency of misclassified cases.

g) Representativeness

A surveillance system that is representative accurately reflects the occurrence of the health event in the population. However, errors and biases in reporting and data collection can reduce representativeness. Even though the presence of non-representative information is not ideal, it can still be useful in monitoring trends and identifying problems. In this situation, one needs to be cautious not to generalize the findings to the community at large.

b) Timeliness

Timeliness reflects the speed or delay between steps in the surveillance system. The intervals usually considered are the amount of time between the event and the reporting of the event; the interval between a report and its transmission for surveillance purposes; the interval between data receipt, entry, and analysis; and the interval from data availability until dissemination of the report. The need for rapidity of response in a surveillance system depends on the nature of the condition and the objectives of the system.

i) Resources

Surveillance systems require ongoing personnel and financial resources in order to collect, process, analyze and disseminate information. Sufficient funds need to be allocated to support the setup and administration of the system. As well, different ways of conducting surveillance vary in cost. The costs and benefits of alternative methods need to be compared in order that the most cost-efficient means are selected.

EXAMPLES OF SURVEILLANCE SYSTEMS

Infectious Disease Surveillance

Specific infectious diseases of public health importance are designated as reportable by provincial and territorial legislation. When they occur, certain professionals have the mandate to inform municipal public health authorities. Periodically, each municipality transmits surveillance data (with nominal information deleted) to the provincial or territorial Ministry of Health. Annually, each province or territory compiles provincial/territorial statistics and forwards them to Health Canada, at the federal level. Analysis of data occurs at municipal, provincial and federal levels of government, and summary reports are produced.

This passive surveillance system is occasionally supplemented by sentinel systems, such as those for influenza, and by active surveillance, such as IMPACT (Immunization Monitoring Program, ACTive). The latter is based in 10 pediatric health centres across Canada, and surveillance centres on severe vaccine-associated adverse events and vaccination failures[16]. Reports of passive and active surveillance information are disseminated through a variety of means, including annual reports, newsletters, website postings, conference presentations, and media communications.

Injury Surveillance

The Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP) is an emergency room-based injury surveillance system that operates in 10 pediatric and six general hospitals across Canada[17]. In these institutions, all patients presenting to the emergency room as a result of injury or poisoning are invited to participate. Patients or accompanying adults complete a one-page questionnaire about the circumstances of the injury. Physicians are asked to record clinical information on the back of the same form.

Quality control regarding capture and accuracy of coding is continuous. As well, the data entry program performs logic checks and provides warnings when unlikely combinations are entered. The initial software for the system, the coding system and data collection forms were obtained at no cost from the Ministry of Health of Australia. However, a custom-designed Oracle system was developed seven years later because the size of the database had expanded beyond its original capacity. Dissemination of information from CHIRPP is conducted three times a year by publication of a newsletter, publications in scientific journals, and presentations at conferences and through the internet[18].

Principles Applicable to Other Systems

The main difference between the two systems is that one condition (infectious diseases) is legislatively reportable, whereas the second condition (injury) is not. Since reporting is mandatory, passive surveillance is the main method of collecting infectious disease data by public health authorities. Injuries, on the other hand, are not a reportable condition, therefore active surveillance and data from existing databases are the main sources used in surveillance. Child maltreatment surveillance shares features of both systems. Like infectious diseases it is a reportable condition; unfortunately, in this case reporting is not to the agency that is planning to conduct surveillance. Because of this feature, it shares the same difficulties in data acquisition as injury surveillance. Despite the differences, the two systems share common principles that can be applied to the development of other surveillance systems.

a) Be Selective in Conditions for Surveillance

Although there are hundreds of infectious diseases that can affect human health, less than 50 are legislatively reportable and placed under surveillance in Canada. In the case of CHIRPP, surveillance is predominantly of injuries to children who present to

emergency rooms. These two systems show that choices have to be made with regard to which variables are chosen for routine monitoring. It is unrealistic to expect surveillance of every condition of interest.

The National Advisory Committee on Epidemiology developed 12 criteria to assist in determining which infectious diseases to include or exclude from surveillance[19]. Although the criteria are not applicable to child maltreatment, the notion of guiding principles that help determine which aspects of maltreatment should be placed under routine monitoring is a useful one.

b) Ensure Effective Communication with Collaborators

Surveillance is a multisectoral, collaborative effort. Success depends on effective communication among sectors to ensure the accuracy of data collection and entry, the timeliness of reports, and the usefulness of results. The example from CHIRPP demonstrates this well. Hospital administrators and directors of pediatric emergency rooms were approached early in the design of the project for their input and cooperation. Ongoing communication occurs between hospitals and Health Canada to solve problems that occur. Efforts are made to ensure that hospitals are "rewarded" for their participation by providing each with its own database as well as acknowledging their involvement in reports and publications.

c) Build Surveillance Systems in Stages

Both IMPACT and CHIRPP began with pilot sites to work out problems in the system before wider implementation. Each started surveillance activity with a limited number of data collection sites and a single data source (i.e., hospital-based data). After the system had been evaluated, additional sites were added and other sources of data (e.g., mortality data and hospital separation data for CHIRPP) were gradually included.

d) Make Ongoing Improvements and Upgrades

Surveillance systems require ongoing evaluation and modification to ensure their effectiveness. As the CHIRPP system demonstrates, each step of surveillance —from data entry and analysis, to hardware and software configurations, to dissemination strategies — underwent change as the system evolved.

CHILD MALTREATMENT DATA

Principles of effective surveillance systems and the experience of surveillance for other conditions can be useful in the development of a national child maltreatment surveillance system in Canada. However, issues specific to child maltreatment data present additional challenges that need to be considered in the planning.

Variability in Child Abuse and Neglect Definitions

There is, unfortunately, no consensus about definitions of child maltreatment. In fact, definitions vary considerably, depending on whether the perspective taken is legal, professional, social, or cultural. The lack of consistency in definitions has been repeatedly documented in the literature but is very difficult to resolve[5,6,20].

The elements that constitute a case of child abuse have changed over the years. Initially, definitions of child maltreatment focused on physical abuse; later sexual abuse was included, and more recently emotional abuse and neglect were added[21]. Child welfare legislation in each province/territory defines "a child in need of protection" and provides the legal basis for intervention. These legal definitions vary across the country, including, for example, the age at which an individual is considered a child[20]. Although the common core of reportable situations is shared, the reporting of less well-defined cases has largely been left to the discretion of professionals in the field. Studies have shown that practitioners are influenced by their own values, beliefs and perceptions about what constitutes a reportable case[6]. Even after a case has been reported, child protection agencies apply working definitions of child abuse and neglect in their investigations[3]. Thus, definitional differences have considerable impact on determining cases of child maltreatment.

Different Levels of Identification of Child Abuse and Neglect

Although substantial numbers of abused and neglected children are reported to child protection services, many are not. In some classification systems, reported cases are divided among four groups:

- those screened out before an investigation is started, which are therefore not investigated;
- those cases not suspected or substantiated following investigation (unfounded);
- those that are suspected of involving abuse but for which there is insufficient evidence for substantiation; and
- those substantiated by an investigation.

Among unreported cases, there are cases that are known to those professionals who have a legislative mandate to report, such as physicians, educators etc., and cases known to professionals and members of the community who are not required by legislation to report. For a variety of reasons these cases, though known, are not reported to the authorities. Finally, there are cases of child abuse and neglect that are unknown.

The levels of identification demonstrate the complexity of measuring the incidence and prevalence of child maltreatment. They show that different methods of case ascertainment will capture different aspects of the condition. For example, child welfare statistics will reflect only reported cases, whereas population surveys that question adults about childhood abuse will elicit both reported and unreported cases, albeit incompletely. Even among reported cases, there are discrepancies among agencies about what constitutes a substantiated report as well as a blurring of boundaries between substantiated and suspected, and suspected and unfounded reports. In addition, interventions that improve reporting, such as professional or public edu-

cation, may shift the number of unreported cases to reported cases. This shift may be misinterpreted as an increase in child abuse and neglect when, in fact, there has been no real change. Finally, undisclosed and therefore unknown cases are not readily amenable to documentation.

Multiple Forms of Child Maltreatment

With broadened definitions of child abuse and neglect, professionals are required to diagnose and report a range of conditions that go beyond physical signs of probable harm. In the Ontario Incidence Study of Reported Child Abuse and Neglect, 17 forms of child maltreatment were included: physical abuse, four forms of sexual abuse, eight forms of neglect, three forms of emotional maltreatment, and an "other" maltreatment category[3]. In the Third National Incidence Study of Child Abuse and Neglect, six major types of abuse (physical abuse, sexual abuse, emotional abuse, physical neglect, emotional neglect, and educational neglect) were classified. The category of physical abuse was not broken down into subtypes, but three forms of sexual abuse, three forms of emotional abuse, seven varieties of physical neglect, seven categories of emotional neglect, and three forms of educational neglect were subtyped[23].

Unfortunately, studies have shown that physicians are more likely to report cases with visible physical harm than other forms of maltreatment[6]. Therefore, the likelihood of reporting varies among forms of abuse. Furthermore, different maltreatment situations may be reported with greater or lesser frequency because different agencies operate under different mandates. For example, child protection statistics may be more likely to report parental sexual abuse, whereas the justice system may be more likely to report non-parental abuse. Finally, cases in which multiple forms of maltreatment co-exist may be classified only as a single form of maltreatment in the statistics[3].

Incidence and Prevalence

It should be noted that the terms "incidence" and "prevalence" are used differently in epidemiology and in child maltreatment. In epidemiology, incidence denotes the number of new cases of a disease in a population during a time period, whereas in child abuse literature, annual incidence refers to the number of children maltreated in a single year (regardless of whether they have been abused before). The term "prevalence" in epidemiology signifies the number of people in a population who have the disease at a given time[24], whereas childhood prevalence in child abuse literature refers to the number of people maltreated at any point during their childhood. One needs to be aware of definitional differences, including the period of interest, when comparing statistics about child maltreatment.

Duplicate Cases

A source of confusion in maltreatment rates is the lack of clarity about the number of maltreated children as opposed to the number of child investigations. The former counts a child only once, even if he/she has been abused on more than one occasion. The latter does not remove duplicate cases, and reports each investigation as a separate event. An estimation of the duplication rate of the Ontario Incidence Study showed that the actual number of maltreated children may be 12.5% less than the number of child investigations[3].

Variability of Available Information

There are no national guidelines about standard data collection in child maltreatment. Agencies collect information about different aspects of child abuse and neglect, depending on the nature of their involvement. Some include statistics about allegations, others about investigations, and still others about substantiated cases, perpetrators etc. The periodicity of the data can vary from monthly activities to cumulative annual statistics[20]. Each record may represent a child, a reported case or a family; therefore the unit of analysis may differ[25].

FUNCTIONAL AND OPERATIONAL ISSUES

Collaborative Partnerships

Many different disciplines are involved in the field of child maltreatment — for example, medicine, law, public health, social work, and nursing. In the establishment of a surveillance system, it is important to involve these sectors from the beginning so that the system is planned in concert, and information needs for the development of interventions are addressed. Representatives from non-governmental agencies who work with abused children and their families should be consulted as well as municipal, provincial and national organizations, such as provincial child protection agencies, police, child abuse units in hospitals, native child welfare, school boards, and consultants in child health at provincial ministries of health.

Input should also be sought from individuals and organizations that are experienced with databases and surveillance systems relevant to child maltreatment. Details about various data sources are covered later, but potential partners include Statistics Canada, the Canadian Institute of Health Information (CIHI), coroners and medical examiners, CHIRPP, and the Division of STD (sexually transmitted diseases) Prevention and Control at Health Canada. Finally, individuals skilled in surveillance system design and implementation, such as epidemiologists and information system experts, need to be brought on board. Operational planning (e.g., setting objectives and priorities, identifying potential data sources, developing methods of data collection, entry, analysis and dissemination) can then proceed as a collaborative effort.

Setting Objectives

The objectives for child maltreatment surveillance could include the following:

- to support data collection on the rates of reported child abuse nationwide;
- to develop baseline information and monitor trends in the reporting of abuse and neglect;
- to advance the knowledge of indicators and determinants related to maltreatment;
- to promote data collection on child abuse from a wide range of sources;
- to foster a better understanding of the types and severity of abuse;
- to share information on child maltreatment with other stakeholders;
- to identify areas for research into child abuse and neglect; and
- to use information to help establish priorities for intervention.

However, beyond programmatic objectives it is important to set clear and realistic objectives for surveillance activities, since these will define the framework for subsequent system components. It should be borne in mind that surveillance is not research, reporting, a community-based registry or a population-based study[12]. Therefore, chosen goals should be those that are attainable by surveillance. Objectives developed at the beginning of surveillance activities can be modified later as the system grows or as needs change in the field. Examples of objectives for child maltreatment surveillance include detecting trends in physical, sexual, emotional abuse and neglect; and obtaining a profile of maltreated children and their families in order to plan intervention strategies.

Case Definitions

It is important when developing surveillance systems that operational case definitions be clearly stated. Careful thought needs to be given to creating the definitions, since they will govern which cases are admitted to surveillance. These definitions may differ from those stated in legislation for a "child in need of pro-

tection" and from working definitions used by child welfare workers when investigating alleged or suspected cases[20].

An ideal surveillance definition would be both sensitive (i.e., it would identify a high proportion of those with the condition and result in few false-negative cases) and specific (i.e., it would include few false-positive cases). In addition, the definition needs to be simple, understandable and unambiguous to apply. Changes in case definitions can affect case numbers and may be mistakenly interpreted as changes in disease trends. Therefore, any alterations to case definitions must be clearly indicated. Along the same lines, rates of occurrence for various conditions are comparable only when the same case definition has been applied.

In surveillance systems, cases are often divided into those that are "substantiated" and those that are "probable". The less stringent criteria for "probable" cases balance high sensitivity with lower specificity in order to ensure that few cases are missed. On the other hand, the more rigid criteria for "substantiated" cases balance high specificity with lower sensitivity, to be sure that false-positive cases are not included. These principles can be applied to child maltreatment surveillance. For example, case definitions can be used to categorize reports into substantiated, suspected, and unsubstantiated cases.

When forming case definitions for child maltreatment, several elements may be included:

- child's age;
- form(s) of maltreatment for inclusion;
- relationship of perpetrator and experienced harm;
- time of occurrence of event versus time of report; and
- level of identification (e.g., not investigated, unfounded, suspected, substantiated).

Existing Data Sources

Data about child maltreatment have most often come from child welfare agencies and the police. However, other data sources include death certificates, chief medical examiner/chief coroner investigations, population surveys, and hospital separation data. The advantages and disadvantages of each source are listed in Table 2.

a) Child Welfare Databases

At present, each province and territory in Canada has legislation requiring mandatory reporting of child abuse[20]. Reported cases are investigated by provincial child welfare agencies. In most jurisdictions child welfare services are delivered through centralized government agencies. In Ontario, for example, a system of over 50 autonomous, provincially regulated children's aid societies operate[20]. In 1996, they investigated 63,489 reports that a child was, or may have been, in need of protection[24].

Considerable variation exists among agencies across Canada in the interpretation of child protection mandates, intervention policies, and the way in which services are organized. As well, individual agencies often have no standard method of collecting investigation data on child abuse and neglect. Therefore, statistical data cannot be compared across jurisdictions[25].

In a few provinces, statutory child abuse registers are maintained. In provinces like Manitoba and Nova Scotia, only substantiated cases of child abuse and neglect are registered; however in Ontario, individuals may be registered given "credible evidence" from child protection agencies. Other jurisdictions do not have statutorily required child abuse registers but some, like Alberta, have a centralized database of child protection cases. The register's accessibility for individuals other than child protection workers and researchers varies among jurisdictions[6].

Table 2
Canadian Child Maltreatment Data Sources

Type of Data	Description	Strengths	Limitations
Child Welfare Data	Reported cases of child abuse and neglect that are investigated by child welfare agencies.	Includes all reported and investigated cases	• Limited to reported cases • No standardized method of collecting child abuse and neglect data across Canada • Variability in case inclusion among agencies • Databases are set up as case management systems, not as information retrieval and analysis systems • Limited information on circumstances
Statistics Canada Mortality Database	Data based on information from death certificates	• Complete coverage of deaths in the entire population • Data available at low cost	• Deaths from maltreatment and neglect may be attributed to other causes • Data are not available for analysis until about 2 years after death • Limited selection of definitions to code deaths
Canadian Centre for Justice Statistics Database	Data about crimes investigated by police in Canada	Provides detailed information regarding victim, perpetrator, and circumstances of assault or homicide in cases where charges were laid	• Only cases reported to police • No crime category listed as "child abuse" in database • Information in detailed revised survey is mostly coming from urban police forces in Ontario and QuebecType of Data
Chief Medical Examiner/Chief Coroner Statistics	Data include all sudden, unexpected and unnatural deaths of children reported to the CME/ coroner	Provides details of deaths and investigations, including autopsies	• No standardized method of collecting child abuse and neglect data in cases of child death across Canada • No standard to what information is collected
Police Statistics	Database is categorized according to charges laid	Provides information about the perpetrator in cases in which charges were laid	• No information is available when charges were not laid • Difficult to retrieve information about the victim since database is set up to retrieve charges.
Canadian Incidence Study of Reported Child Abuse and Neglect	A research study of reported child abuse and neglect. A multistage cluster sampling design of data from child welfare agencies across Canada	• First study of its kind in Canada • Standardized case inclusion and data extraction forms were used	• Limited to reported cases from a sample of child welfare agencies • Data collection limited to 3-month period in fall 1998
Population Surveys	Surveys of adults in the community about a history of abuse in childhood	Elicits reported and unreported cases of childhood abuse	• Estimates prevalence of childhood abuse, not incidence. Rates dependent on participants' willingness to disclose
Hospital Separation Data (HMD and DAD)	Data based on information from hospital discharges	• Complete coverage of hospital separation • Available at low cost	• Intentional injuries due to child abuse may not be coded as such • Limited coding selection does not capture all types of abuse

b) Statistics Canada Mortality Database

Statistics Canada maintains a national mortality database with information obtained directly from central vital statistics offices in every province and territory. From information requested on death certificates regarding the circumstances of the event, deaths due to homicide, assault, abuse and neglect are coded according to International Classification of Disease (ICD) codes E960-969[26]. Although child deaths from homicide are often recorded, deaths due to maltreatment and neglect may not always be listed as such on the death certificate[7] .

c) Canadian Centre for Justice Statistics Database

Since 1962, the Centre has compiled uniform crime reporting statistics from police forces across Canada. A more detailed and lengthy survey was introduced in the mid-1980s, but only a small group of police departments in Canada, mostly in Quebec and Ontario, have converted to its use. In addition, a homicide survey database is maintained by the Centre and includes all incidents of homicide under investigation by police across Canada. This database provides more detailed information than Statistics Canada's mortality database regarding the victim, perpetrator, victim-offender relationship, and circumstances surrounding the homicide[7] Unfortunately,there is no category listing for child abuse in the database, therefore most of these cases would be listed as assaults. Special surveys such as the 1993 Violence Against Women survey are conducted on a periodic basis. A victimization survey will be published in late summer 2000 based on special data collection in Statistics Canada's General Social Survey (R. Allen, personal communication).

d) Police Statistics

The role of the police in child abuse investigation is to determine the criminal nature of the event. This usually involves incidents of physical or sexual abuse, or death. The police may also be involved to varying degrees in other instances of child abuse or neglect. The police and child welfare agencies may conduct joint investigations in which the police pursue criminal investigation and the child welfare agency looks at child protection issues. Thus, police data are tabulated according to the charges laid, such as homicide, manslaughter, and failure to provide the necessities of life. Cases in which no charges are laid are not extractable[7].

e) Chief Medical Examiner/Chief Coroner Statistics

In every province and territory in Canada, unexpected, sudden and non-natural deaths of children are reported to the Chief Medical Examiner/Chief Coroner. Investigation of these cases often involves the police and, in some jurisdictions, child death review committees consisting of representatives from several disciplines. Autopsies are conducted on young children (different cut-offs are used in different jurisdictions) or if there is a concern about the cause of death. Sexual abuse tests are done only if the circumstances suggest that they are warranted. The exception is Manitoba, where swabs are routinely taken and tests are ordered if necessary[7]. Although these reports provide a better description of the circumstances of death than does the Statistics Canada mortality database, there are no agreed-upon set of variables for which data are collected.

f) Canadian Incidence Study of Reported Child Abuse and Neglect

This study, the first of its kind in Canada, used a multistage cluster-sampling methodology to collect data from provincial and territorial child welfare agencies in order to provide national estimates on the incidence of child abuse and neglect. To ensure consistency across sites, standardized operational definitions were used to determine case inclusion; as well, standard data collection instruments were used to extract case information. The study also described characteristics of the child and family, characteristics of maltreatment, key determinants of abuse and neglect, and investigation

outcomes[8]. The present plan is to repeat the Canadian Incidence Study every three to five years.

g) Population Survey

The prevalence of specific forms of maltreatment have been examined in population surveys of adults. One Canadian study is the National Population Survey, conducted for the Committee on Sexual Offences Against Children and Youth in the early 1980s and involving 2,135 adults[27,28]. A more recent survey was the 1990 Supplement to the Ontario Health Survey, which examined a history of physical and sexual abuse among 9,953 Ontario residents who were 15 years and older[2]. Unlike child welfare databases, which are limited to reported cases, population surveys identify both reported and unreported cases. Even so, findings are dependent on participants' willingness to disclose and may still underestimate the true prevalence of child abuse.

b) Hospital Morbidity Database and Discharge Abstract Database

The Canadian Institute of Health Information (CIHI) receives data about hospital separations from two sources: the hospital morbidity database (HMD) and the discharge abstract database (DAD). HMD includes 100% of acute care discharges in Canada and provides clinical and demographic data, including primary diagnosis, admission date, discharge condition, etc. DAD is a patient-specific database which is more detailed than HMD but which receives data from only 85% of all hospital discharges in Canada. CIHI has initiated work toward merging the two databases (CIHI website: www.cihi.ca).

Primary diagnoses of hospital discharges are routinely categorized with ICD codes and are available for analysis. E-coded discharge data from hospitals provide an opportunity to use this source of morbidity data for monitoring child maltreatment. Unfortunately, child maltreatment cases may not be documented on discharge summaries, and abuse cases are missed. One study in the United States, which compared intentional injury cases given E codes with those identified through a multi-hospital surveillance system, found that only 75% of injuries in children resulting from violence were accounted for by the use of E codes[29].

What is the Population Under Surveillance?

Ideally, all cases of child maltreatment in Canada would be placed under surveillance. Unfortunately, this would represent quite a challenge, since many cases remain undisclosed, unreported and misclassified. The development of possible strategies to sample undisclosed and unreported maltreatment should be examined with key stakeholders to explore the viability and practicality of such data collection efforts. Therefore, decisions need to be made regarding subgroups of the population for which surveillance would be conducted. The choice will be guided by information needs, potential data sources, resources available to collect new information, and the use to which the data will be put.

At the early stages of surveillance, existing databases such as Statistics Canada's mortality database and hospital separation data such as HMD and DAD provide ready sources of information. These data are passively collected from death certificates and hospital discharge records. Authors who have studied the representativeness of these databases report under-ascertainment as the main problem[29-31]. Despite this limitation, they provide population-wide national trend data about the condition. The feasibility of including coroners' reports from each region to supplement child maltreatment death statistics can also be explored.

Further down the road, consideration may be given to examining the possibility of using data from child welfare agencies, police and other agencies. However, if the Canadian Incidence Study of Reported Child Abuse and Neglect is conducted every three to five years, ongoing collection of data from child welfare

agencies may not be necessary. In the future, active surveillance strategies may be considered.

Frequency of Data Collection and Dissemination

The availability of up-to-date information for prevention and intervention efforts as well as program planning is important. The rapidity of response depends on the urgency of the problem. For example, during infectious disease outbreaks, control efforts are implemented immediately and data gathering and analysis are conducted simultaneously to support these efforts. However, day-to-day reports of infectious diseases are usually disseminated monthly and more detailed analyses annually. The frequency of data collection and dissemination, as well as methods of dissemination of child maltreatment data, can be determined following discussion with partners in the field.

Data Variables

The availability of information about variables of interest will depend on the data source. Databases from sectors that deal with only one aspect of child maltreatment, such as coroners or police, may have information about some but not all variables of interest. Nevertheless, in settings such as pediatric hospitals with child abuse units, more information will be available. If efforts are made beforehand to capture additional variables in structured forms, comprehensive information may become attainable.

The following are some variables of interest. The list was compiled by summarizing information from the following documents: *Conceptual Framework for Child Maltreatment Surveillance*[32], *Canadian Incidence Study of Reported Child Abuse and Neglect: Final Report*[33], and *Third National Incidence Study of Child Abuse and Neglect*[23]. The availability and ease with which the variables can be collected vary.

a) Characteristics of the child

- age
- sex
- race/ethnicity
- housing status (e.g., living at home, on the streets)
- educational status
- postal code of address
- previous reports of maltreatment
- presence of physical or developmental disability

b) Maltreatment circumstance

- source and date of allegation
- form(s) of maltreatment
- status of the report (e.g., unsubstantiated, suspected, substantiated)
- severity of harm
- duration of maltreatment
- investigating agencies

c) Characteristics of the alleged perpetrator(s)

- relationship with the child
- history of abuse
- age
- sex
- employment status
- race/ethnicity
- previous allegations of a similar offence
- history of alcohol or drug use

d) Characteristics of caregiver(s)

- age
- sex
- relationship with the child
- history of abuse
- employment status
- marital status

- educational level
- ethnicity/race

e) Characteristics of household

- household income
- description of other members of the household and their relationship to the child
- previous reports of maltreatment or violence in the family
- housing accommodation

Data Transfer and Privacy

Privacy and confidentiality policies govern access to national, provincial or territorial databases. If a requesting agency meets data disclosure requirements, then access should not be a problem. However, records belonging to agencies such as hospitals, coroners, police, and child welfare agencies are confidential documents set up for case management. All such records contain names and personal identifiers, therefore privacy issues have to be considered when transferring information.

Data Storage, Analysis and Dissemination

Appropriate hardware and software have to be in place to support data collection, transfer, storage, analysis and dissemination. These needs have to be evaluated periodically as the surveillance system expands. If data are collected on paper records, accurate and timely data entry into computer databases has to be arranged. Once the data have been prepared, appropriately trained staff, such as epidemiologists, should become involved in analysis and report writing. It will also be necessary to determine what information will be disseminated, how often and by what methods.

OTHER ISSUES

Integration with Health Canada's Surveillance Activities

In the planning of child maltreatment surveillance, it should be borne in mind that Health Canada is in the process of developing a network of health surveillance. The ultimate vision of the network is a system that provides public health decision makers in Canada with access, through the Internet, to surveillance information across the country. A working group has been established, and some key tasks include developing and maintaining on-line inventories of health databases and surveillance products; developing and adopting standards necessary for optimal operation of health surveillance systems, including standards for data models, database elements, connectivity etc.; and initiating pilot projects to create new surveillance tools and capacity that can be applied to other areas of health surveillance[34]. It would be useful for information about developments in the network to be made available so that the implications for child maltreatment surveillance can be considered.

Surveillance of Risk Indicators Associated with Child Maltreatment

There is a considerable body of literature regarding social, psychological and environmental factors associated with child maltreatment. Whether the factors are causal is often difficult to establish because of methodological problems in the original studies. Interested readers are referred to earlier chapters, which review many of these factors and their interactions[32]. Exam-

ples of factors that have been identified include the following:

Individual/Family Level

- Socioeconomic factors: poverty, underemployment, low education
- Family structure: single parent families, large families with many children, marital conflict and violence, frequent moves, homelessness
- Social isolation, family history of marital conflict and violence
- Perpetrators who were themselves abused as children

Community Level

- Neighbourhood characterized by poverty, excessive numbers of children per adult resident, high population turnover, and high concentration of single-parent families
- High unemployment
- Few social resources to assist families

The inclusion of risk factor information in the surveillance database would be of great interest. However, such data are often not collected and may not be available in case reports. Retrospective collection of risk factor information has often proved unsuccessful, but prospective data collection may be feasible. One possibility, if interest and cooperation can be elicited with specific agencies such as pediatric hospitals, is to collect data about risk indicators at the time of evaluation for child maltreatment. Although risk information is very valuable, the task of collecting it cannot be excessively onerous because it will decrease acceptance and participation in surveillance.

The linkage of data from multiple sources has been used to gain a more complete picture of child abuse cases. For example, Felitti et al[35] linked medical evaluations of patients at a clinic with emergency room visits, pharmacy utilization, outpatient visits and hospital discharge data. In this scenario, individual consent was obtained from each participant to permit access to other databases. Data linkage has also been attempted by the Institute of Clinical Evaluative Sciences (ICES) with the National Population Health Survey and administrative databases such as the Ontario Health Insurance Program (D. Manual, personal communication). Whether one would be able to obtain consent in child abuse cases to permit such linkages can be explored.

Some authors have circumvented the problem of missing risk factor information on individuals by resorting to ecologic measures of risk. For example, Guyer et al[36] calculated the level of community urbanization and the percentage of the population under the poverty line as a measure of socioeconomic status of each Massachussetts community where childhood intentional injuries occurred. They found the occurrence of intentional injuries increased with degree of urbanization and increased level of poverty in the community. Similarly, a wide variety of variables such as age structure, ethno-cultural mix, income, education, housing, and employment can be extracted from the census and correlated with child maltreatment cases in the same community. Even though this method has been used, one must be aware that it is subject to ecological fallacy, i.e. conclusions regarding individual risk may be erroneously based on information about group risk, since risk factors have not been collected on an individual basis. This method is valuable in pointing out potential risk indicators in child maltreatment that warrant further study.

Surveillance of Behavioural Indicators Associated with Child Maltreatment

Recently, investigators have begun to report an association between childhood abuse and adult health risk behaviours and disease. The Adverse Childhood Experiences (ACE) Study of 8,056 adults showed a strong dose–response relationship between childhood

abuse and alcoholism, drug abuse, depression and suicide attempts. In addition, a graded relationship was found between childhood abuse and adult diseases, including ischemic heart disease, cancer, and chronic lung disease[35]. Bensley et al[37] have found that self-reported heavy drinking and HIV-risk behaviours among adults were associated with self-reported childhood histories of physical and/or sexual abuse. Similar findings were also reported among adolescents, in whom alcohol and drug use were associated with childhood abuse[38]. The impact of child maltreatment on personal adjustment and coping resources across the lifespan is described in Dr. Wolfe's chapter[32].

As recognition has increased that behavioural factors are prominent causes of morbidity and mortality, surveillance techniques have expanded from measuring outcomes to including measurements of behavioural factors such as alcohol use[39]. The Behavioural Risk Factor Surveillance System (BRFSS) is sponsored by the Centers for Disease Control and Prevention. It involves administering a questionnaire by telephone to a random sample of individuals on an ongoing basis, to identify trends in behaviours that affect health risk. Respondents who are 18 years of age and older are selected by random digit dialling of unlisted and listed telephone numbers in each community. Interviewers record answers using computer software, and in households with more than one adult the program randomly selects one adult to interview. Bensley et al[37] used the 1997 Washington State BRFSS to ask a representative sample of adults about childhood physical or sexual abuse and levels of alcohol use. Although a surveillance system similar to BRFSS does not exist in Canada, its methodology can be considered in the collection of child maltreatment and behavioural information from the general Canadian population.

Unreported Cases

Cases of child maltreatment may be unreported for several reasons. A child may not disclose abuse, the professional who sees a child does not suspect abuse, or the person to whom the child discloses does not file a report. Using data from the first U.S. National Incidence Study of Child Abuse, Hampton and Newberger[40] showed that reported cases differed from unreported cases. Cases of physical and sexual abuse and physical neglect were more likely to be reported, whereas cases of emotional abuse, educational neglect and emotional neglect were more likely to be unreported. The study also suggested that victims from higher income families were less likely to be reported.

U.S. studies have shown that 51.5% of all child abuse reports were filed by mandated professionals and 48.5% by non-mandated reporters. This 50-50 split was substantiated in the Ontario Incidence Study. Approximately 10% of all reports originated from medical and hospital personnel. On the basis of calculations from the second U.S. National Incidence Study of Child Abuse and Neglect, the reporting probability of mandated professionals has been estimated at 56%. As expected, the actual reporting rates vary across professional groups, settings and geographical regions. Among hospital staff, a reporting probability of 66% has been found[6]. Research has been conducted to examine barriers to reporting and possible strategies to reduce these barriers.

Although there is interest in finding out more about unreported cases, there are no simple ways to do this. Methodology has to be developed that can verify who would otherwise not be reported. Any attempts to gather meaningful information about such cases seem more suitable for a research setting. In the study by Hampton and Newberger[40], child abuse cases reported to child protection agencies by hospitals in the first National Incidence Study of Child Abuse and Neglect were compared with child abuse cases reported directly to the study, based on defined criteria. Almost half the cases that met the study's definition of abuse were found never to have been reported to child protection agencies.

If there is interest in introducing interventions that would improve reporting, one must determine who should administer the intervention, what it would consist of, how its effect would be studied, and how the setting can be controlled in such a way that any effect can be attributed to the intervention. These endeavours are beyond the scope of surveillance.

Cultural Relevance

Data about race are commonly collected in the United States, but less often in Canada. A great deal of sensitivity and controversy surround the need for, and the use of, ethno-racial information. In child maltreatment literature, there are suggestions that race can bias reporting[40], that the degree of acceptance of physical punishment varies greatly among cultures[6], and that self-reported forms of maltreatment differ among ethnic groups[41]. As well, population surveys may omit groups; for instance, the Ontario Health Supplement excluded subgroups such as First Nations people living on reserves in the sampling frame. When appropriate prevention and intervention strategies are being designed, accurate information about groups at risk is important. Therefore, ethno-racial data collection is an essential component of surveillance for child maltreatment. Additionally, efforts should be made to involve agencies who work with ethno-cultural communities to solicit their input and to collaborate with them in gathering surveillance data that are of relevance.

Information about child maltreatment among Aboriginal communities is sparse. Embree and De Wit[42] have found that the experience of sexual abuse during childhood and higher alcohol consumption were related to lower satisfaction with current spousal relationships in one Canadian Native community. Piasecki et al[43] used key informant surveys in Arizona and New Mexico to examine abuse and neglect-related factors among Native American children who were in mental health treatment or were known to have been abused.

Future studies among Aboriginal communities need to involve First Nations people and their service providers. It may be possible to modify and repeat the Canadian Incidence Study of Reported Child Abuse and Neglect among a sample of native child welfare agencies across Canada. As well, the possibility of conducting community surveys to examine abuse issues should be explored.

METHODOLOGY ISSUES

Underestimation of Cases

Under-ascertainment of cases is a problem in monitoring child maltreatment. Winn et al[29] found that 25% of intentional injuries in children resulting from violence were missed when analyzed by E codes in hospital separation data. Studies have also shown that inaccurate coding of causes of death, incomplete or inaccurate information on death certificates, varying case definitions about abuse and neglect, incomplete police reporting, lack of perpetrator information, and lack of designation of most neglect deaths as homicides all contribute to under-ascertainment of child abuse mortality. A U.S. study (1985-96) of deaths among children under 11 years of age found that ICD-9 coding underestimated abuse homicides by an estimated 61.6% when compared with data from medical examiners[30]. An earlier U.S. study (1979-88) of fatal abuse and neglect deaths among children aged 0-17 years found that 85% of these deaths were attributed to other causes[31]. Despite these limitations, the authors suggest that vital statistics can still be used to track historical trends, especially if statistical methodologies that correct for under-ascertainment are applied.

In light of these limitations, efforts should be made to ascertain the feasibility of using coroners' data in describing child deaths due to maltreatment. It may also be possible to cross-check these files with child welfare agencies and police records to improve the ability to determine underlying causes of death as well as to gain information about risk factors and perpetrators.

Biases

The way in which child abuse cases come under surveillance makes it clear that biases can be introduced in each step along the way. The circumstances of the child-family abusive situation, the report and investigation all invite bias. The nature of maltreatment may or may not be categorized correctly, and multiple forms of maltreatment may or may not be recorded. Depending on the data source used for surveillance, the case may or may not come to the attention of the surveillance system. Depending on case definitions for surveillance, a case may or may not be included. Even among included cases, missing data may be present in a systematic way, adding further bias into the system.

Nonrepresentative data may still be useful in providing a picture of the problem, but there needs to be awareness of this limitation when the information is used. Such data cannot be generalized from subgroups of the population to other groups or to the population as a whole. There should be awareness of the groups of individuals and types of maltreatment more likely to be captured by the surveillance system and those more likely to be under-represented.

Duplicate Records

The number of child maltreatment reports is not equal to the number of children who were maltreated. Duplicates can occur because the same maltreatment event is reported by more than one source, or because the same child has experienced maltreatment more than once. When data are collected from more than one source, the chance of counting an occurrence more than once increases. Regardless of the reason, it is important to identify duplicate reports in order to present accurate statistics about maltreated children.

In surveillance systems in which nominal information is recorded (such as municipal infectious disease surveillance systems) records can be matched by name, date of birth, and residence. However, names are often not legally available without consent, therefore non-nominal systems exist where codes are recorded instead of names. In such situations, other identifiers will need

to be used for matching, e.g. date of birth, sex, and residence. The likelihood of a match increases as the number of matched elements increases.

Choice of Denominators

In the calculation of rates of maltreatment, consideration should be given to the comparability of the categories (e.g., age, sex) used in the numerator and denominator. The denominators for rate calculations are often obtained from completely separate data systems (e.g., census) than the numerator. Therefore care must be taken to ensure that appropriate denominators are selected. The choice of denominators becomes more complex when the unit of analysis of the numerator is not the same as that of the denominator, for example, when case reports with duplicates are present in the numerator.

SUMMARY

Ongoing statistics about child maltreatment can provide important information for the development of prevention and intervention strategies on child abuse and neglect. Previous experience with public health surveillance shows that successful systems contain the following features: usefulness, simplicity, flexibility, acceptability, sensitivity, specificity, representativeness, timeliness and resources.

In the design of child maltreatment surveillance, it is important to involve partners from different sectors and disciplines from the outset. Issues specific to child maltreatment data have to be considered, for example, variability in definitions of child abuse and neglect. Clear objectives need to be set as well as unambiguous surveillance cases defined. Sources of child maltreatment data can then be identified along with variables of interest. Thereafter, the frequency of data collection/transfer, analysis, and dissemination, and methods of data storage need to be determined.

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